EFFECTIVENESS OF EMERGENCY PREPAREDNESS PROTOCOL ON KNOWLEDGE AND SKILL REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS, AT SELECTED HOSPITALS, CHENNAI, 2018

DISSERTATION SUBMITTED TO

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LIST OF ABBREVIATIONS

AHA	-	American Heart Association
ANOVA	-	Analysis of Variance
BLS	-	Basic Life Support
BMI	-	Body Mass Index
B.P	-	Blood Pressure
CINAHL	-	Cumulative Index to Nursing and Allied Health
CIPP	-	Context, Input, Process and Product
CDC	-	Centre for Disease Control and prevention
CKD	-	Chronic Kidney Disease
COPD	-	Chronic Obstructive Pulmonary Disease
CPR	-	Cardio Pulmonary Resuscitation
CVD	-	Cardio Vascular Diseases
CVS	-	Cardio Vascular System
DALY	-	Disability Adjusted Life Year
DF	-	Degrees of Freedom
ED	-	Emergency Department
EMS	-	Emergency Medical Services
GHO	-	Global Health Observatory
ICCR	-	International Centre for Collaborative Research
ICMR	-	Indian Council of Medical Research
IEC	-	Information Education and Communication
IHD	-	Ischemic Heart Disease
MEDLINE	-	Medical Literature Analysis and Retrieval System Online
MI	-	Myocardial Infarction
NCD	-	Non - Communicable Diseases
NH	-	Null Hypothesis
OHCA	-	Out of Hospital Cardiac Arrest
ORS	-	Oral Rehydration Solution
PCE	-	Patient Centered CPR Education
RCT	-	Randomised Controlled Trials
ROSC	-	Return of Spontaneous Circulation

SCA	-	Sudden Cardiac Arrest
SCD	-	Sudden Cardiac Death
WHO	-	World Health Organization

LIST OF SYMBOLS

χ^2	-	Chi square
=	-	Equals To
<	-	Less than
≤	-	Less than or equal
>	-	More than
%	-	Percentage
p	-	Level of significance
n	-	Number of samples
N	-	Total number of samples
°	-	Degree
+/-	-	Plus or minus

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ABSTRACT

Effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers, at selected hospitals, Chennai, 2018

ABSTRACT

Aim and objective**:* To assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers. ***Methodology**:* A quasi- experimental, non – equivalent control group pre test, post test research design was adopted to assess the effectiveness of Emergency Preparedness Protocol among 120 patients and their care givers (30 patients with chronic illness + 30 caregivers in each experimental group and control group) conducted at Governmental Hospital setting, Chennai who satisfied the inclusion criteria were selected as samples based on Non probability convenient sampling technique. Education given on Emergency Preparedness Protocol using power point presentation includes general information about cardiac emergencies, signs and symptoms, assessment techniques, emergency measures and use of cardiac emergency kit to handle cardiac emergencies at home for 20 – 30 minutes, preparation of cardiac emergency kit for 5 -10mins, demonstration and re demonstration on the steps of Blood pressure monitoring on the patient and Adult Basic Life Support (BLS) techniques on a mannequin to a group of 5 to 10 care givers for 10mins. The pre and post test level of knowledge for patients with chronic illness and their caregivers and pre and post test level of skill for caregivers were assessed using structured knowledge questionnaire and observational checklist respectively. ***Results: The findings of the study revealed that the calculated unpaired't' value for the post test level of knowledge among experimental group patients was t=13.32 which showed a very high statistical significance at p<0.001 level. The calculated unpaired't' value for the experimental group caregivers was t=14.28 which showed a very high statistical significance at p<0.001 level. The calculated unpaired't' value for the post test level of skill among experimental group caregivers was t=13.43, which showed a very high statistical significance at p<0.001 level. ***Conclusion:*** The results revealed that Emergency Preparedness Protocol was effective in improving knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

Key words: *Cardiac emergencies, pre hospital management, CPR, patients with chronic illness, caregivers*

INTRODUCTION

Non-communicable diseases (NCDs) - or chronic diseases are long duration diseases and shows slow progression. The four main types of NCDs are CVDs, cancer, chronic respiratory diseases such as Chronic Obstructive Pulmonary Disease (COPD), asthma and diabetes. NCDs are the world's leading cause of death, representing 63% of

all annual deaths and kill more than 36 million people each year. NCDs also accounts for 80% of all deaths occur in low- and middle-income countries.

Cardiovascular emergencies are life-threatening emergency disorders which must be recognized immediately and promptly treated without delay to minimize the mortality. Patients may present with severe hypertension, chest pain, dysrhythmia, or cardiopulmonary arrest.

Centre for disease control and prevention, 2017 reported that heart disease is the leading cause of death for both men and women globally and in 2015,it accounted for more than half of the deaths in men. About 6, 30,000 Americans die from heart disease each year—that's 1 in every 4 deaths. More than 70% of SCA occurs at home or at similar private settings like workplaces, during sports. About 95% of SCA victims die before reaching the hospital and medical care facility and out of which only 6% survive after cardiac arrest.

India as a developing country still shows inadequate focus on cardiac disease as one of the major national health problems. Knowledge and participation of the patients with chronic illness and their caregivers along with the health care professionals in the training services will minimize the mortality rate due to any type of cardiac emergencies and helps the caregivers to handle the emergent situation effectively without delay in time in managing cardiac emergencies. These concepts awakened the desire of the investigator to study the effectiveness of Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

Objectives

To assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

Null hypotheses

NH_1 : There is no significant effect of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental and control group at $p < 0.05$ level.

NH_2 : There is no significant effect of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental and control group at $p < 0.05$ level.

METHODOLGY

A quasi experimental non- equivalent control group pre test and post test research design was adopted to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers. The independent variable of this study was Emergency Preparedness Protocol and dependent variables were level of knowledge and skill. The study was conducted in Government Hospital settings, Chennai. The study population was patients with chronic illness and their caregivers at selected settings. Totally 120 samples (30 patients + 30 caregivers in each experimental and control group) were selected based on inclusion criteria by using Non – probability convenient sampling technique.

After obtaining formal permission and informed written consent, the investigator obtained demographic details from the experimental group samples through the structured demographic profile. Then assessed the pretest level of knowledge regarding pre hospital management of cardiac emergencies using structured knowledge questionnaire for the patients with chronic illness and their caregivers and the skill on Blood pressure monitoring steps and Adult BLS techniques for the care givers of patients with chronic illness by using observational checklist. On the same day, the intervention was given for the experimental group about 30 - 45 minutes in which 20 minutes for lecture cum discussion using power point education on general information, signs and symptoms, assessment findings, emergency measures for cardiac emergencies and 10 minutes for preparation of cardiac emergency kit and 10mins for demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS

techniques on a mannequin. On the 7th day after pre test, the investigator conducted the post test using the same tool.

The same procedure for data collection was followed for the control group and the normal hospital routine was carried out for the patients with chronic illness and their caregivers. On the 7th day, the investigator administered the Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies on the completion of post test. As reinforcement, an information booklet regarding Emergency Preparedness Protocol was issued for both the experimental and control group.

RESULTS

The findings of the study revealed that, in the experimental group, for the patients with chronic illness the post test knowledge mean score was 19.57with S.D of 2.60 and in the control group the post test knowledge mean score was 11.17 with S.D of 2.26 and the calculated unpaired 't' value was 13.32 at $p<0.001$ level which showed a very high statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies between the experimental and control group.

Also in the caregivers of patients with chronic illness post test knowledge mean score was 20.09 with S.D of 1.56 and in the control group the post test knowledge mean score was 12.06 with S.D of 2.66 and the calculated unpaired 't' value was 14.28 at $p<0.001$ level which showed a very high statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies between the experimental and control group.

In the experimental group, the caregivers of patients with chronic illness post test skill mean score was 14.00 with S.D of 1.96 and in the control group the post test skill mean score was 6.10 with S.D of 2.55 and the calculated unpaired 't' value was 13.43 at $p<0.001$ level which showed a very high statistical significant improvement in the level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group caregivers than the control group.

The correlation of post test knowledge score was 8.83 with S.D was 2.88 and the skill mean score was 8.53 with the S.D of 2.45. The calculated Karl Pearson correlation coefficient 'r' value 0.46 which was highly statistical significance at $p<0.01$ indicates moderate positive correlation, whereas in control group the calculated 'r' value was 0.14 which had no statistical significance, signifying that an improvement in knowledge had a positive influence on increasing the skill among caregivers of patients with chronic illness in the experimental group than control group.

DISCUSSION

The study results revealed that Emergency Preparedness Protocol education had an impact on improving the level of knowledge of the patients with chronic illness and their care givers and improving the level of skill on caregivers shows the effectiveness of the intervention tool among patients with chronic illness and their care givers which in turn may improve the level of confidence in providing pre hospital management of cardiac emergencies which helps to save the lives from dangerous complications.

CONCLUSION

The present study assessed the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

Cardiac emergencies are life threatening disorders that must be recognized immediately and the Smart and Wise use of the Emergency Preparedness Protocol helps in saving the precious life of the patients with chronic illness by addressing the cardiac emergencies promptly will aid in improving their quality of life.

IMPLICATIONS

- Pre hospital management of cardiac emergencies should be incorporated in nursing education curriculum and evidence based guidelines should be integrated to save the lives as well as render effective and quality health care to patients.
- Clinical nurses should take the responsibility to plan the teaching programme and mass health education and skill training programme on Adult BLS techniques for the public especially focusing on pre hospital management of cardiac emergencies.

- Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies education to incorporate in discharge planning for the patients with chronic illness.
- Nursing research motivates the investigators to conduct further study on different aspects from this topic. Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies is an effective and efficient means of managing cardiac emergencies which occurs at home helps to reduce further morbidity and mortality.

INTRODUCTION

Health is a state of complete, physical, mental, and social well-being and not merely the absence of disease or infirmity

- Preamble to the Constitution of the World Health Organization (WHO), 1946[1].

The human heart is an organ that pumps blood throughout the body via the circulatory system, supplying oxygen and nutrients to the tissues and removing carbon dioxide and other wastes out of the body.[2]

Non-communicable diseases (NCDs) - or chronic diseases are long duration diseases and shows slow progression. The four main types of NCDs are CVDs, cancer, chronic respiratory diseases such as Chronic Obstructive Pulmonary Disease (COPD), asthma and diabetes. NCDs are the world's leading cause of death, representing 63% of all annual deaths and kill more than 36 million people each year. NCDs also accounts for 80% of all deaths occur in low- and middle-income countries. (Source: WHO Fact sheet, 2013)[3]

The burden of NCD diseases are raising disproportionately. In 2016, accounted for 70% of deaths globally and in India, around 58,17,000 deaths were estimated from NCDs like cancer, diabetes and heart problems. A cardio vascular disease (CVD) i.e. Coronary heart disease, Stroke and Hypertension contributes to 45% of all NCD deaths, followed by chronic respiratory disease (22%), cancer (12%) and diabetes (3%). (Source: Sushmi Dey, The Times of India, September, 2017)[4]

Global Health Observatory (GHO) data, 2017[5] stated that NCDs are the leading cause of deaths in 2015, over three quarters of NCD deaths -- 30.7 million -- occurred in low- and middle-income countries. At worldwide, CVDs (17.7 million deaths, or 45% of all NCD deaths), cancers (8.8 million, or 22% of all NCD deaths), and respiratory diseases, including asthma, COPD (3.9 million deaths) and diabetes caused another 1.6 million deaths.

Cardiovascular emergencies are life-threatening emergency disorders where patients may present with severe hypertension, chest pain, dysrhythmia, or cardiopulmonary arrest which must be recognized immediately and promptly treated without delay to minimize the mortality. [6]

1.1 BACKGROUND OF THE STUDY

Ischaemic heart disease (IHD) and stroke are the world's biggest killer diseases, accounting for about 15.2 million deaths in 2016. These diseases have remained the leading causes of death globally over past 15 years. (Source: WHO fact sheet, 2018)[7]

Centre for disease control and prevention, 2017[8] reported that heart disease is the leading cause of death for both men and women globally and in 2015, it accounted for m**o**re than half of the deaths in men. About 6, 30,000 Americans die from heart disease each year—that's 1 in every 4 deaths. Coronary heart disease (CHD) is the most common type of heart disease, which cause around 3,66,000 deaths in 2015. Heart disease is the leading cause of death for people of most racial/ethnic groups in the United States, including African Americans, Hispanics, and whites whereas in Asian Americans or Pacific Islanders and American Indians or Alaska Natives, it is the second leading cause of death. The health care costs around $200 billion each year which include health care services, medications, and less productivity due to heart disease in United States.

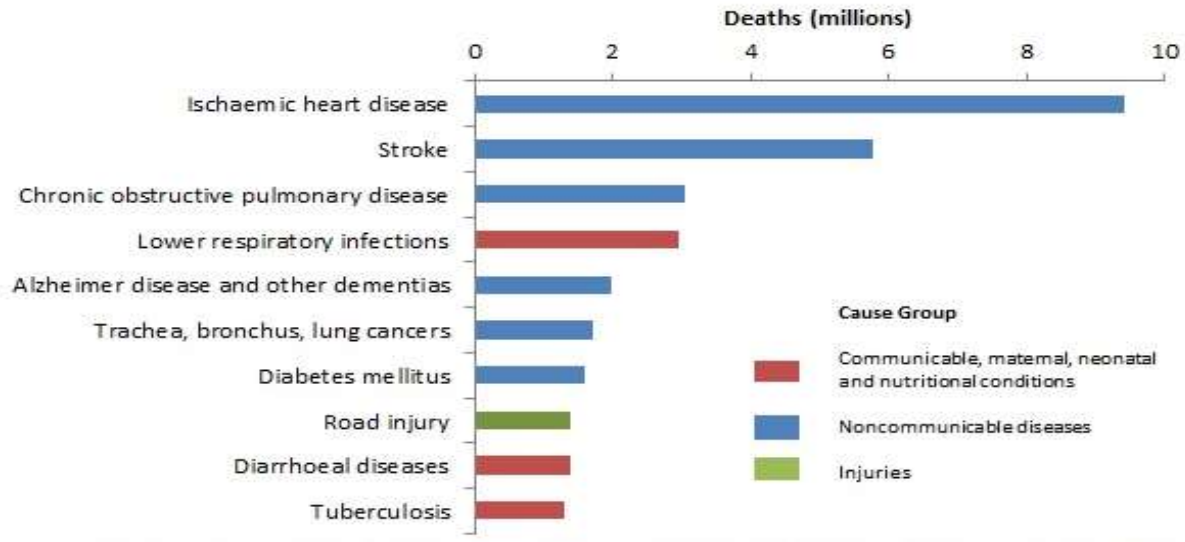

Fig.1.1.1: Top ten global causes of death, 2016.

(Source: Global health estimates, 2016, WHO Fact sheet, 24th May 2018)[7]

Health data compiled from more than 190 countries showed that heart disease remains the No. 1 global cause of death with 17.3 million deaths each year. Heart disease remains the nation's leading cause of death in the United States (U.S), since 1921 and it is estimated that 85.6 million people in the U.S. were living with CVDs, including heart attack, stroke, high blood pressure and chest pain. About 32.6% (80 million) U.S adults have high blood pressure with increased death rate of 13.2% due to high blood pressure over the time period of 2001 -2011 irrespective of drop in overall cardiovascular deaths over that same time period. (Source: American Heart Association (AHA) news; Heart Disease and Stroke Statistics report — 2014)[9]

More than 70% of Sudden Cardiac Arrests (SCA) occurs at home or at similar private settings like workplaces, during sports. About 95% of SCA victims die before reaching the hospital and medical care facility and out of which only 6% survive after cardiac arrest. More than 350,000 Out-of-Hospital Cardiac Arrests (OHCA) occur in the U.S., per year, out of which 70% happens at home. As per studies, 45% heart attacks occur amongst people under 65 years of age. As per AHA, 1 in 6 men and 1 in 8 women, above 45 years of age have had a stroke or heart attack. (Source: Key CPR facts and statistics, 2018)[10]

Table.1.1.1 Incidence of OHCA

Year	Out-of-Hospital Cardiac Arrest		
	Incidence	**Bystander CPR**	**Survivor rate**
2015	326,000	46.1%	12%
2016	>350,000	45.9%	10.6%

(**Source:** The American Heart Association Heart Disease and Stroke Statistics update – 2017)[11]

Global burden of CVDs, 2016 estimated that by 2020, CVDs will be the largest cause of disability and death in India. The country already has more than 118 million people with hypertension, which is expected to increase to 213 million by 2025. CVDs have become the leading cause of mortality (1/4th cases of all mortality) in India. IHD and stroke are the predominant causes and are responsible for >80% of all CVD deaths. The Global Burden of Disease study estimated age-standardized CVD death rate of 272

per 100 000 population. India is higher than the global average of CVD death rate of 235 per 100 000 population**.** (Source: Prabakaran.D, Circulation Journals, 2016) [12]

Table 1.1.2: Top Ten causes of death in India

Rank	Causes of death	Male (%)	Female (%)	Total (%)
1	Cardiovascular diseases	26.3	22.5	24.8
2	Respiratory diseases	10.1	10.4	10.2
3	Tuberculosis	11.4	8.3	10.1
4	Malignant and other tumors	7.8	11.8	9.4
5	Ill defined conditions	4.8	6.0	5.3
6	Digestive diseases	6.1	3.5	5.1
7	Diarrheal diseases	4.0	6.6	5.0
8	Unintentional injuries	5.0	4.1	4.6
9	Intentional self - harm	3.3	2.6	3.0
10	Malaria	2.4	3.4	2.8

(**Source:** A Joint Report of the Register General of India and Centre for Global Health Research, 2015) [13]

World Atlas, 2018 [14] reported that in India, top ten causes for CVDs among people aged 25 – 69 years were 26.3% in males, 22.5% in females.

Over 70% of all SCDs are due to underlying heart blockages. Out of which 60% of deaths occur within an hour associated with acute heart attack associated with serious ventricular arrhythmias like ventricular fibrillation. Patients with diabetes, older adults, and those with prior heart attack or prior bypass surgery are particularly susceptible to silent myocardial ischemia. About 65% of OHCA occur at home and if it is not witnessed or resuscitated timely, less than 2% victims only will be alive after a month. Having an arrest at home is a strong independent predictor of adverse outcome. Bystander Cardio Pulmonary Resuscitation (CPR) is the only answer in OHCA**.** (Source – Deccan chronicle, February 2018)[15]

AHA released Heart Disease and Stroke Statistics - 2018 Update [16] stated that there are more than 3,56,000 OHCA occurs annually in the U.S. nearly 90% of them are fatal and the annual incidence of Emergency Medical Services(EMS) assessed non-traumatic OHCA in people of any age is estimated to be 356,461.

Table 1.1.3: Characteristics and Outcomes for OHCA.

Characteristics of and Outcomes for OHCA	Adults (%)	Children (%)
Survival to hospital discharge	10.8	10.7
Good functional status at hospital discharge	9	8.2
VF/VT shockable	20.2	7.2
Public setting	21.1	16.1
Home	68.1	83.6
Nursing home	10.8	0.3

(**Source:** American Heart Association cardiac arrest statistics– 2018); Sudden cardiac arrest foundation, SCA News, January 2018) [16]

The Registrar General of India[17] released the medical certification of cause of death report in 2015 which was based on the cause of death certificate issued by the Medical Practitioner who authorize the death which showed 31.6% people died of diseases of the circulatory system which include heart diseases and stroke, and had a steady rise of 3% since the last report came out in 2014.

Tamil Nadu shows the highest crude mortality rate due to CVD in the country at about 360-430/100,000 population in which 10.4% of population suffer from diabetes, 20% suffers from high blood pressure, and 23% were overweight**. (Source: The Hindu, 2013) [18]**

NCDs and CVDs are the most common health-related issues witnessed in Tamil Nadu. The recent Global Burden of Disease study released in lancet journals in the title of "Nations within a nation: Variations in epidemiological transition across the states of India, 1990-2016, highlights the disease burden affecting Tamil Nadu in terms of DALY

(Disability Adjusted Life Year) which accounts for 72.3% burden of NCDs in Tamil Nadu, whereas CVDs constitute 37.4% of it. The Lancet report highlighted IHDs adding more burden of diseases in Tamil Nadu. IHDs, diabetes, sense organ disorders, self-harm, low back and neck pain ailments, migraine, chronic kidney related diseases and depressive disorders witnessed a larger loss of healthy years or DALYs in Tamil Nadu than the national mean of these ailments. (Source – Deccan chronicle, 2017) [19]

An Indian Council of Medical Research INDIAB study (2015) [20] in Tamil Nadu shows the overall prevalence of diabetes is l0.4% in which 13.2% in urban and 7.8% in rural areas in the state. Apart from health burden, CVD also poses economic burden on the state by treating a large population with Hypertension, Diabetes, and CVDs besides burdening the health system of the state**.**

Heart attacks and other cardiac-related ailments caused 54% of all deaths and no less than 88% of people died of heart attacks and other cardiac problems everyday in Chennai in 2015. The Registry of Tamil Nadu also revealed that around 32,339 people died due to heart failure in 2015 out of which 4,724 people died due to ailments arising out of aging, 2,769 of diabetes mellitus, 2,470 due to cancer, 1,251 of respiratory failure, 943 of pneumonia and 940 in road accidents. (Source – Christian Philip, The Times of India, January 2016) [21]

Diabetes mellitus is one of the world's major chronic diseases which currently affect 143 million people worldwide and the number is growing rapidly whereas, in India, about 5 per cent population suffers from diabetes. (Source: Rakesh Malik, The Times of India, January, 2016) [22]

According to the Official WHO data, India is in top rank order from the list of countries with the highest number of diabetics followed by China, America, Indonesia, Japan, Pakistan, Russia, Brazil, Italy and Bangladesh. In 2000, the total number of diabetics in India stood around 31.7 million and is expected to rise by more than 100% in the year 2030 to account to a whopping of 79.4 millions. **[23]**

Projections show that by 2030, it estimates about 41.4 % of US adults will have hypertension, an increase of 8.4 % from 2012.(Source: Heart disease and Stroke statistics, 2017) [24]

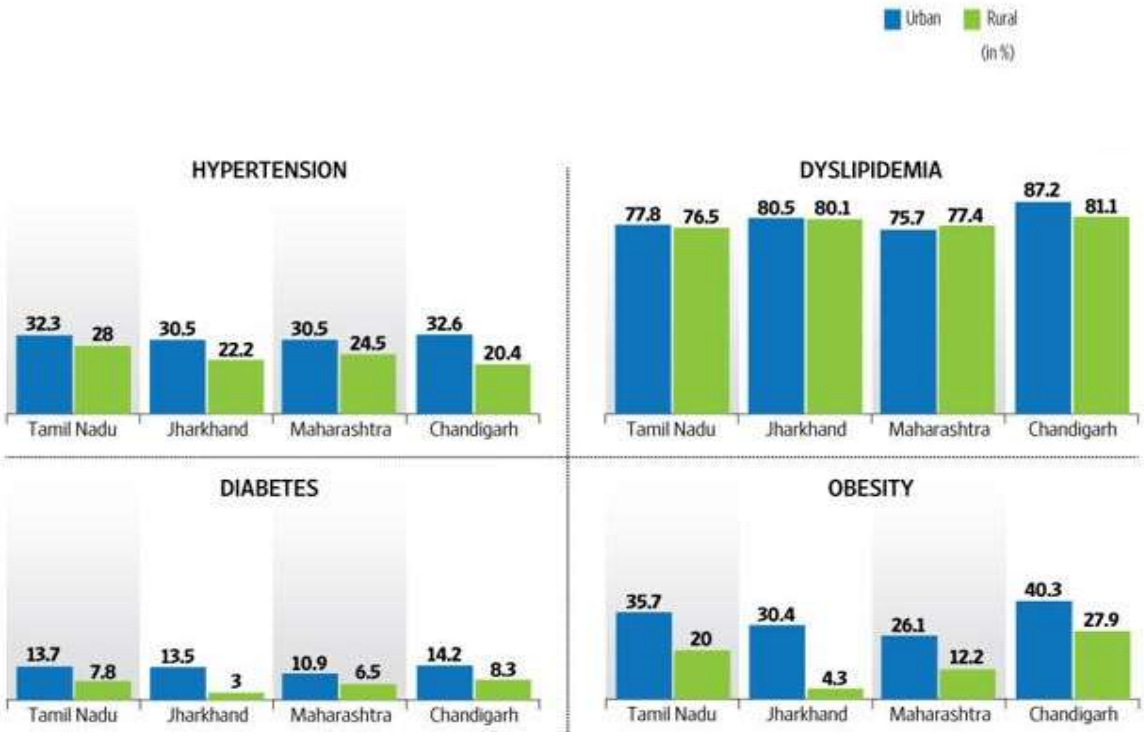

Fig.1.1.2: Prevalence of NCDS and risk factors in India.

(**Source:** "ICMR-India Diabetes (INDIAB) study: Phase 1", Jyotsna Singh, www.livemint.com, 2016) [25]

World health day, 2013[26] imply the importance about hypertension related cardiovascular risk. It is dangerous to ignore high blood pressure which increases the chances of life-threatening complications and high blood pressure causes harmful consequences to the heart and blood vessels and also to major organs such as the brain and kidneys. Hypertension increases cardiovascular risk, and can also be high in people with mild hypertension in combination with other risk factors e.g., tobacco use, physical inactivity, unhealthy diet, obesity, diabetes, high cholesterol, low socioeconomic status and family history of hypertension. Low socioeconomic status and poor access to health services and medications also increase the vulnerability of developing major cardiovascular events due to uncontrolled hypertension**.**

People in urban areas are greater victims of hypertension and around 33-40% as compared to villages about 12-17 % in India. The global men-women ratio also replicates in the Indian scenario, with 23.5% of men and 22.6% of women, above the age of 25, falling prey to the silent killer. The World Heart Federation says several countries in the world are training the common man about CPR to save sudden cardiac victims from dying, where as less than 1% of Indians would presently know how to carry out a CPR. (Source: Sinha K, Times of India, 2018) [27]

About 56.5% of OHCA events are witnessed by bystanders out of which 92.5% occur at home. Only 1.3% of these arrests received CPR by bystanders. OHCA is a leading cause of global mortality which affects 356,000 patients in U.S each year. OHCA is also one of the leading causes of death in India. It is estimated that less than 10% of patients who survive during an OHCA event globally whereas in Indian data is however hard to find. The greatest impact on survival is of the time taken to initiate CPR. The lack of knowledge of CPR and training among bystanders in the community, and absent/ delayed emergency response systems is the main reason why most OHCA patients in India do not get appropriate and timely CPR. (Source: Dr.O.P. Choudry, Medi Bulletin, April 2018) [28]

The World Journal of Emergency Medicine reported that only 1.3% of OHCA received CPR by the bystanders in India compared to western scenario, 18 – 55% of patients receive CPR from bystanders. This is crucial as lack of perfusion (circulation of blood) leading to irreversible cell death in brain leads to poor outcome. CPR along with the access to external defibrillators (devices to restore the normal rhythm of the heart) has the potential to improve outcomes in all patients of cardiac arrest outside the hospital. (Source: Medi Bulletin, 2018) [28]

“A lot of precious time is still being wasted in transporting a cardiac arrest patient to a health care facility. The time delay mostly is because of the patient being located in remote rural areas or belonging to a terrain that is difficult to access,” said by Dr. Meenakshi Sharma, a scientist at ICMR**.** (Source: Daily Sun, 2018) [29]

CVD is common in people with chronic kidney disease (CKD) regardless of age, stage of kidney disease or kidney transplant associated with underlying conditions that cause renal disease, such as high blood pressure and diabetes, people at risk for cardiovascular disease. (Source: Kidney Disease Overview and Education – DaVita, 2018)[30]

CVD is the number one killer diseases of adults. Prompt recognition and initiation of appropriate treatment can save lives during three of the most deadly cardiac emergencies: Sudden cardiac death, Heart failure, and Acute Pericarditis**. (**Source: Heart disease and stroke statistics 2013 update - 2014) [31]

1.2 SIGNIFICANCE AND NEED FOR THE STUDY

Heart disease shares a major part of the global burden of lifestyle diseases. Earlier, non-modifiable risk factors like age, gender, family history were mainly responsible for heart disease. India will soon become the heart disease capital of the world. [32]

A handful of Indian researchers Chauhan S, Aeri B T.,(2013) [33]., Gupta R., Mohan I., (2016) [34] performed a systematic epidemiological review research on prevalence of CVDs in India revealed that CVDs are one of the most important causes of morbidity and mortality in the country & showed an increased prevalence of CVDs in India as compared to other developing countries with recent trends showing incidence in younger age group and also India has a larger population of vulnerable older adults that contribute to the CVD inflicted population.

Hailemariam T.,(2014)[35] conducted a cross sectional study in Ethiopia which revealed the prevalence of 11% of the medical emergency admission was due to cardiac emergency in ER, majority were dominated by females around 114(55.6%) and males were 91(44.4%) and the prevalence of cardiovascular emergency is high in general and the leading cause was Rheumatic valvular heart diseases followed by hypertension and IHD and an improvement of emergency care along with lifestyle modification is essential to minimize the burden of cardiac emergencies.

Multiple researchers such as Koike S, Ogawa T, (2011)[36] & Hara M., Hayashi K, (2015)[37] conducted a nationwide observational study in Japan among witnessed OHCA patients which revealed that the shortening of time to first EMS – CPR intervals were associated with outcomes of both 1 month survival and neurologically favorable and found improving the emergency medical system and the speed and quality of CPR in case of OHCA for improving the better outcomes and survival rate.

Indian researchers Sajithkumar.P., Dr. Ratna Prakash (2015)[38]., Krishna C.et al.,(2017)[39] observed the outcome of CPR in a bystander witnessed OHCA and the factors contributing the performance/ non- performance of CPR and factors influencing the CPR outcome among bystander witnessed OHCA patients brought to Emergency Department(ED) visits in India which revealed the survival was better in witnessed arrests and early initiation and effective bystander CPR had significant improvement in survival outcome following OHCA and focused strategies designed to set up an EMS services and to boost the rates of bystander CPR and preparing public to perform life saving skills by educating the lay public in basics of CPR in case of OHCA event in India.

Series of researchers such as Srivatasa U N., Swaminathan K., Munavarah KSA (2016)[40] conducted a retrospective analysis which revealed that SCD contributed 10.3% overall mortality in rural southern India, predominantly in the south Indian cities in younger adult men and more frequently associated with Myocardial Infarction (MI) and also identified the cardiovascular risk factors such as hypertension; diabetes mellitus was significantly higher in urban setting SCD group, and where majority of SCD events occur at home and 85% of cases were witnessed and stressed the need to reduce the burden of SCD and its risk factors to improve the outcomes by way of establishing the chain of survival which includes public education on CPR practices.

Rao GVR., Rao HVR., Reddy GK., Prasad MNV, (2016)[41] conducted a retrospective study to describe the epidemiology of cardiac emergencies found that a higher number of cardiac emergency cases were reported by individuals living below the poverty line in Andhra Pradesh, Telungana, Assam, and Goa and around 7458 of patients died before the ambulance arrived (3.0%), with some states having much higher rates:

Tamil Nadu 2831 (10%) and Andhra Pradesh 1369 (9%)followed by the researchers emphasized EMS services should be available throughout the country including rural areas on high priority.

Pre-hospital management strategy at a community level includes mass awareness about whom to resuscitate, when to resuscitate and how to resuscitate. People also need training on how to manage resuscitated patients before arrival to hospital/EMS services. Lack of a comprehensive and unified national emergency medical system and set EMS guidelines/protocols are the factors that reduce patients' prognosis and outcome of cardiac arrest. Bystander education on CPR is of extreme importance in most OHCA cases. (Source: Medi Bulletin, 2018)[28]

The investigator from her own professional experience in cardiology department had observed a high number of deaths of the patients with cardiac arrest and other cardiac emergencies before reaching the hospital. Hence, after an extensive review of literature and discussion with experts, the investigator felt that education and training of the patients with chronic illness and their caregivers will minimize the mortality rate due to any type of cardiac emergencies and helps the caregivers to handle the emergent situation effectively without delay in time. These concepts awakened the desire of the investigator to study the effectiveness of Emergency Preparedness Protocol on pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

1.3 STATEMENT OF THE PROBLEM

A quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai.

1.4 OBJECTIVES

1. To assess and compare the pre and post-test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group and control group.

2. To assess and compare the pre and post-test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.
3. To assess the effectiveness of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.
4. To assess the effectiveness of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness.
5. To correlate the post test level of knowledge score with skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.
6. To associate the selected demographic variables with mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group.
7. To associate the selected demographic variables with mean differed skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group.

1.5 OPERATIONAL DEFINITIONS

1.5.1 Effectiveness

It refers to the outcome of Emergency Preparedness Protocol, assessed in terms of change in level of knowledge and skill regarding pre hospital management of cardiac emergencies like chest pain, sudden cardiac arrest, hypotension and hypertension which was evaluated by using a structured knowledge questionnaire and observational checklist respectively, within the study period.

1.5.2 Emergency Preparedness Protocol

It refers to a set of interventions, developed by the investigator aimed at managing the cardiac emergencies at home which includes,

- **Lecture cum Discussion** using power point presentation on Emergency Preparedness Protocol like general information about cardiac emergencies, signs and symptoms, assessment findings, emergency measures to manage

cardiac emergencies at home for 20 to 30 minutes for a group of 5 to 10 patients with chronic illness and their caregivers.

- **Preparation of cardiac emergency kit** with the items of patient's medical information, general items, own medications list and medications, Emergency Preparedness Protocol to a group of 5 to 10 patients with chronic illness and their caregivers for 5-10mins.
- **Demonstration and re demonstration** of the steps of Blood pressure monitoring on the patients and Adult BLS techniques on a mannequin for a group of 5 to 10 care givers of patients with chronic illness for 10mins.
- The total duration of the intervention was about 30 – 45minutes.
- **Information booklet** regarding Emergency Preparedness Protocol information was given for reinforcement.

1.5.3 Knowledge

It refers to the level of understanding about Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies such as chest pain, sudden cardiac arrest, hypotension and hypertension among patients with chronic illness and their caregivers which was evaluated by using a structured questionnaire devised by the investigator. The evaluation was done by the investigator after a period of 7days.

1.5.4 Skill

It refers to the capability of caregivers of patients with chronic illness to demonstrate the Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin which was evaluated by using observational checklist devised by the investigator. The evaluation was done by the investigator after a period of 7days.

1.5.5 Pre hospital management of cardiac emergencies

It refers to the initial management given to a person with any cardiac emergency at home prior to transferring the patient to the hospital for further management.

1.5.6 Patients with chronic illness

It refers to an individual who was medically diagnosed with chronic illness such as diabetes mellitus, hypertension and chronic kidney disease for a period of more than 6 months.

1.5.7 Caregivers

It refers to the persons who are taking care of the patients with chronic illness at home.

1.6 NULL HYPOTHESES

NH_1 : There is no significant effect of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental and control group.

NH_2 : There is no significant effect of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental and control group.

NH_3 : There is no significant correlation of post test level of knowledge score with skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental and control group.

NH_4 : There is no significant association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers in the experimental group.

$NH_{5:}$: There is no significant association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental group.

1.7 DELIMITATIONS

1. The study was delimited to a period of four weeks
2. The study was delimited to patients with chronic illness like diabetes mellitus, hypertension, chronic kidney disease and their care givers.

1.8 CONCEPTUAL FRAMEWORK

A conceptual framework is the abstract and logical structure of meaning that guides the development of the study which enables the researcher to link the findings to nursing's body of knowledge. It is the symbolic representation of relationships among the phenomena and concepts. **(Betty M. Johnson & Pamela. B. Webber, 2015)[42]**

This section deals with the conceptual framework adopted for the study. A conceptual framework or model provides the investigator with the guidelines to proceed in attaining the objectives of the study. It is a schematic representation of the steps, activities and outcome of the study.

The present study aimed at developing and evaluating the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai. The investigator has adopted conceptual framework by integrating the concepts of **Stuffle Beam's CIPP Model and Von Bertalanffy's General System Model.**

CIPP Evaluation model is a program evaluation model which was developed by Daniel Stuffle Beam and his colleagues in 1960's. CIPP is an acronym for **Context, Input, Process and Product.** It provides a comprehensive, systematic and continuously ongoing framework for program evaluation. System model focuses on the organizing, interacting and interaction of parts and sub parts and the interdependence of the parts.

1. Input

It refers to an open system that exchanges energy with an environment and continually attempts to adapt holistically. In this study, it refers to the demographic variables of patients with chronic illness and their caregivers. The demographic variables of patients which includes age, gender, education, religion, occupation, monthly income, dietary pattern, history of co-morbid illness, dependency of the patient on caregivers. The demographic variables of caregivers which include age, gender, and degree of relationship with the patient, education, occupation, duration of time spent with the patient per day.

2. Goal

This describes the plan for decisions and collection of data apart from providing rationale for the determination of objectives. The present study is carried to determine the effectiveness and improve knowledge and skill on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in terms of gain in knowledge and skill.

3. Input evaluation

It is the process to determine resources, alternative strategies and determine plan that has best potential to meet the needs of the program. It involves determining the steps and resources to accomplish goals or objectives. In this study it refers to the assessment of pre test level of knowledge for patients with chronic illness and their care givers with the structured knowledge questionnaire & pre test level of skill for care givers of patients with chronic illness using observational checklist.

4. Throughput

It is the process of exchange of matter with its environment, presenting import and export, building-up and breaking-down of its material components. In this study, through put refers to the

- Development of Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.
- Development of tool: Self administered structured knowledge questionnaire and observational checklist to assess the knowledge and skill on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.
- Validation of tool and teaching module.
- Establishment of reliability of tool by test re test method and inter rater method.
- Framing a research design - Quasi experimental non- equivalent control group pre test and post test research design.
- Selection of samples – Non probability convenient sampling technique.

5. Process

It refers to the different operational procedures of the program. In this study, it refers to the administration of Emergency Preparedness Protocol to experimental group regarding pre hospital management of cardiac emergencies which includes a lecture cum discussion using power point presentation on Emergency Preparedness Protocol, preparation of cardiac emergency kit, demonstration and re demonstration on the steps of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin, Information booklet regarding Emergency Preparedness Protocol. Control group follows the usual routine hospital care during the process.

6. Product

After processing the input, the system returns product to the environment in the form of practicing in their daily lives. In this study, the investigator assess the post test level of knowledge on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers and assess the post test level of knowledge with skill on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness.

7. Outcome

If there is an adequate and moderately adequate level of knowledge will help the patients with chronic illness to co operate and manage effectively in care of cardiac emergency outside the hospital setting and it can be enhanced. Inadequate knowledge will be reinforced on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

If there is an adequate and moderately adequate knowledge with good or fair skill will help the care givers of patients with chronic illness to manage effectively the cardiac emergency outside the hospital setting and it can be enhanced. Inadequate knowledge with needs improvement in skill will be reassessed on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

8. Feedback

The feedback is the process by which the output of the system is redirected as a part of the input of the same system. The feedback for the system depends on the output which is either may be reinforcement or reassessment. In this study, the inadequate knowledge for the patients with chronic illness and inadequate knowledge with needs improvement in skill for the caregivers of patients with chronic illness will be rectified by reassessment, which serves as an input. This is a continuous process.

Conclusion

The integrated **Stuffle Beam's CIPP Model and Von Bertalanffy's General System Model** provided the comprehensive, systematic guidelines throughout the study process to evaluate the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

1.9 OUTLINE OF THE REPORT

Chapter 1: Deals with the introduction, back ground, significant and need for the study, statement of the problem, objectives, operational definitions, research hypotheses, assumptions, delimitations and conceptual frame work.

Chapter 2: Focuses on critical review of literature related to the study.

Chapter 3: Enumerates the methodology of the study.

Chapter 4: Presents the data analysis and data interpretation.

Chapter 5: Deals with the discussion of the study

Chapter 6: Gives the summary, conclusion, implications, recommendations and limitations of the study.

This study report ends with reference coated and appendices.

REVIEW OF LITERATURE

2.1 INTRODUCTION

This chapter focuses on literature review, which aids to generate a picture of what is known about a particular situation.

An extensive review of literature was done by the investigator to gain an insight into the problem, collect maximum information from systematic and critical review of scholarly publication and unpublished scholarly print materials.

2.2 SOURCES OF REVIEWED LITERATURE

This review of literature was done using the key words such as prevalence, cardiac emergencies, pre hospital management, OHCA, sudden cardiac death, AMI, hypotension/ hypertension emergencies, Basic life support, CPR, patients with chronic illness and their care givers, home blood pressure monitoring, knowledge and skill, This review was searched based on standard databases such as Cochrane library, Cumulative Index to Nursing and Allied Health (CINHAL), Google Scholar, Medical Literature Analysis and Retrieval System Online (MEDLINE), Pub Med and other unpublished studies from dissertations. It includes cross-sectional surveys, cross over studies, cohort studies, longitudinal prospective studies, systematic reviews, Meta analysis, Randomized Controlled Trials (RCTs) and quasi-experimental design that explore the knowledge and skill of patients with chronic illness and their care givers regarding pre hospital management of cardiac emergencies. Collectively 100 studies were searched out of which 70 relevant and updated studies within the duration of the year 2010-2018 were utilized to support the current research topic. Among the selected 70 supportive studies, 50 were International and 20 were Indian literatures.

The aim of this extensive search of literature review was to identify the knowledge and skill of patients with chronic illness and their caregivers regarding pre hospital management of cardiac emergencies to improve the patients and their family awareness regarding management of cardiac emergencies which occurs at home set up. The intention of this review of literature is to gather the best evidences and to derive better understanding of various aspects of the interventions to improve the quality of

simple and cost effective measures on Emergency Preparedness Protocol in managing cardiac emergencies among patients with chronic illness and their caregivers.

2.3 ORGANIZATION OF REVIEW OF LITERATURE

For the purpose of logical and systematic sequence the chapter was divided into the following sections.

Section 2.3.1: Critical reviews related to prevalence of cardiac emergencies.

- Critical reviews related to prevalence of NCDs, OHCA, MI, hypotension / hypertensive emergencies.

Section 2.3.2: Critical reviews related to pre hospital management of cardiac emergencies.

- Critical reviews related to out of hospital management of MI, SCA, orthostatic hypotension, hypertensive emergencies.

Section 2.3.3: Critical reviews related to knowledge and skill on pre hospital management of cardiac emergencies.

SECTION 2.3.1: CRITICAL REVIEWS RELATED TO PREVALENCE OF CARDIAC EMERGENCIES.

Khalequzzaman MD et al., (2017)[43] Naseem S, Khattak UM, Ghazanfar H, Irfan A (2016)[44] conducted a community based cross sectional study in Bangladesh and Pakistan revealed that hypertension, diabetes, dyslipidemia, tobacco use and obesity were the prevalent risk factors of NCDs which indicates the burden of NCD among urban poor and also found that urbanization in South East Asia has resulted in mushrooming of coronary heart disease, diabetes and respiratory diseases.

Multiple researchers in India Aryal KK., et al., (2014)[45] and Bhagyalaxmi.A, Atul T., Shikha J.,(2013)[46] conducted **a** cross-sectional study in Nepal and Gujarat revealed that high blood pressure is a major health problem in the elderly population of both sexes in both urban and rural areas. The burden of age-specific rates of death from chronic diseases is accelerating in low and middle-income countries and observed that there was

a higher prevalence of raised blood glucose among urban residents compared to rural residents.

Collins DRJ., et al., (2017)[47] conducted a mixed method study and Catorelli V, Burnham G., Shabila N., (2017)[48] conducted a population based study revealed that the higher burden of NCDs among Iraqi refugees in Jordan and Syria found hypertension had the highest prevalence followed by diabetes and cardio vascular diseases and also found that individual NCD prevalence and multiple co morbidity increased significantly with age, where the true burden of NCDs were underestimated /undiagnosed.

Multiple researchers Hailemariam T.,(2014)[35] and Hasan S.M., Khan HLR., Chowdhury AW , Sabah KMN., (2013)[49] conducted a cross sectional study in Ethiopia and Bangladesh signifies that most of the medical emergency admissions were due to cardiac emergency in ER, the mean age group was above 40 years and prevalence of cardiovascular emergency is high in general and the leading cause was myocardial infarction, valvular heart diseases and also found hypertension and diabetes were the most common co morbidities.

Multiple researchers Hawkes C., et al., (2017)[50], Mawani M., et al., (2016)[51] and Kitamura T., et al (2014)[52] conducted a prospective study in public and private hospitals, in England, Pakistan and Osaka city revealed that most cardiac arrests occurs at residence which was mostly witnessed by the bystanders but only few received CPR and the impact of overall survival after OHCA is less than 1% and the survival rates were highest amongst those who received bystander CPR.

A handful of Indian researchers Chauhan S, Aeri B T.,(2013)[33] and Gupta R., Mohan I.,(2016)[34] performed a systematic epidemiological review research on prevalence of CVDs in India revealed that CVDs are one of the most important causes of morbidity and mortality in the country & showed an increased prevalence of cardiovascular disease in India as compared to other developing countries with recent trends showing incidence in younger age group and also India has a larger population of vulnerable older adults that contribute to the CVD inflicted population.

Multiple researchers Guiga.H.,et al.,(2017)[53] conducted an observational study in France and Janke AT., et al.,(2016)[54] conducted a descriptive epidemiological analysis in U.S revealed that patients with hypertensive emergencies or urgencies had poor long-term prognosis, where short-term mortality is mainly due to neurovascular emergencies, but cardiovascular emergencies were also severe with high mortality at 12 months and also found that among acute target organ damage, heart failure was the most common, and second most common diagnosis was cerebrovascular disease (CVA) or stroke in hypertensive emergencies.

A bunch of Indian researchers Piyanuttapull S., Angsanakul J., (2017)[55] reviewed the medical records of ER patients identified that the hypertensive emergency is common among patients with hypertensive crisis with the prevalence rate 79 per 1 lakh patients and dyspnea is a positive predictor and many had Systolic BP (SBP) ≥ 180 mmHg or Diastolic BP (DBP) ≥ 120 mmHg at the screening blood pressure measurement. Whereas, Dhadke. S.V., Dhadke. V.N, Batra. D.S., (2016)[56] conducted a cross sectional study revealed that the prevalence of hypertensive emergencies were 1.2% in ICU set up. Breathlessness was the most presenting complaint followed by neurological deficit, headache, and chest pain on admission. Other symptoms included were vomiting, giddiness, psychomotor agitation, and decreased urine output. Most common organ involvement was the retina followed by cardiovascular system (CVS), renal and then the central nervous system (CNS).

Series of researchers Henry K., et al., (2013)[57] conducted an observational study in Cork City, Ireland revealed that 56% OHCA patients from urban location and 44% in rural locations, 20% were lay witnessed and 22% received bystander CPR. Resuscitation was attempted 78%, out of whom 15% achieved return of spontaneous circulation (ROSC) and7.4% survived to leave hospital, whereas the other retrospective cohort analysis of data from the Cardiac Arrest and Resuscitation Epidemiology (CARE) project done by Goh E.S.,et al., (2013)[58]in Singapore found that 68.9% were collapsed in residential areas and only less than 1% survived to discharge compared with non – residential areas 2.7% of patients survived to discharge which significantly shows that outcomes for OHCA in residential areas were poorer than in non-residential areas and

emphasized on efforts to improve survival from OHCA in residential areas which includes increasing CPR by family members and reducing ambulance response time.

Wechkunanukul K., et al., (2015)[59] conducted a integrative literature review reported on the factors associated with longer delay times including old age, female gender, ethnicity, low education level, history of chronic disease, lack of knowledge of the symptoms, and under utilization of ambulance services and found the mean time taken to seek care for chest pain did not meet the recommended time from international guidelines. Whereas, Alnemer K., et al., (2016)[60] conducted a retrospective, cross-sectional study in Riyadh showed that ambulance response time for cardiac emergencies were 13mins which is much longer than the defined standard of 8 minutes which is comparable to other regions of the world.

A bunch of researchers Ghazawy ER., Seedhom AE, and Mahfouz EM (2015)[61] conducted a cross sectional study among Acute MI patients in Egypt found that the median delay time in seeking medical care was 4 hours and also found emotional attitude was important determinant to patient delay in seeking care. But according to Rivero F., et al., (2016)[62] and Fathi M., et al (2016)[63] revealed that median delay time was > 6 hours of their onset of symptoms and also found that gender of the patient, mode and route of transport, scene-to-hospital distance, outpatient physician consultation and cigarette smoking, history of co morbid illness like diabetes, hypertension, kidney disease were the risk factors of delayed treatment seeking among AMI patients.

Series of researchers Zhu QO., et al., (2016)[64] and Freud T. Punchik B, Press Y., (2015)[65] conducted a cross sectional study, the cohort study by Veronese. N., et al.,(2015)[66] among elderly patients in Singapore and Italy revealed that older age, co morbidities such as cardiac failure and kidney disease, physically inactive at work, fatigue, were found to be significantly associated with orthostatic hypotension and also found that orthostatic hyper/hypotension both seem to be relevant risk factors among elderly. Older age was an independent risk factor for overall mortality. The literature review study by Zhou.Y.U., (2017)[67] also evidenced that the pooled prevalence of orthostatic hypotension appears high in diabetes with a co-morbidity of hypertension and

also suggested that attention should be focused on diabetic patients with the stated risk factors to prevent orthostatic hypotension.

A bunch of researchers Omosola A., et al., (2018)[68] conducted a retrospective observational study and the case control study by Ro Y.U., et al., (2016)[69] among cardiac patients in Middle east and Korea revealed that diabetes increased the risk of Out of hospital cardiac arrest associated with poor outcome and also found that diabetics with OHCA were older, females and also with co morbidity like hypertension, chronic renal failure and found dyspnea as the preceding symptom rather than chest pain.

SECTION 2.3.2: CRITICAL REVIEWS RELATED TO PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES.

Multiple researchers Viereck S., et al., (2017)[70], Geri G, et al.,(2017)[71] and Hasselqvist I ., et al., (2015)[72] conducted an observational study in Denmark, King country, WA and Sweden respectively found that CPR performed by bystanders was associated with long term survival twice more than with no CPR before EMS arrival and appears cost-effective and the majority of bystander were initiated CPR during the emergency call following dispatcher assisted instructions which is beneficial to initiate CPR in residential areas.

Series of researchers Nehme Z., Andrew E., Bernard S., Smith K., (2016)[73], Koike S., Ogawa T., Tanabe S., (2011)[36] conducted an observational study revealed that resuscitation efforts exceeding 32minutes shows < 1% of survivors and found shorter collapse to EMS CPR intervals were associated with 1 month survival and favorable neurological outcome. But according to Morais DA., et al., (2014)[74] conducted **a** retrospective study in Brazil found the determinant factors for the immediate survival of persons who receive CPR in which majority of patients were males, the median age was 64 years, and the ambulance response time is 9 minutes, the favorable outcome observed with witnessed cardiac arrest by BLS trained person and the ongoing CPR efforts up to 48minutes duration are the key methods to improve the outcome of OHCA.

A bouquet of researchers Raja Pandian G., et al., (2016)[75] conducted a retrospective study in South India among ED resuscitated SCA patients identified the

factors like age, pre arrest hypotension, witnessed cardiopulmonary arrest, interval between resuscitation and arrest, early initiation of ACLS, pre morbidities such as sepsis, malignancy, diabetes mellitus, and renal disease may influence the outcome of CPR and found that age ≥ 65 years and longer duration of CPR were the significant predictors of mortality. But according to Pereira AL., Girish Narayan., Shakuntala Murty.,(2016)[76] revealed in his retrospective study that age of the patient and the duration of CPR were associated with sustained return of spontaneous circulation (ROSC).

Graham KJ., et al., (2012)[77] presented an article in circulation journal proposed a principal set of clinical programs which provide scope of cardiovascular conditions managed within a cardiovascular emergency system. It has the potential to improve clinical outcomes and to provide ongoing education for patients, providers, and the community which acts as a foundation for cost-effective care thereby can reduce morbidity and mortality and optimize care at a national level.

Series of researchers Zhixin W U., et al., (2018)[78], Bobrow. B.J., (2016)[79] conducted an observational study in Arizona revealed that Dispatcher-Initiated Telephone cardiopulmonary resuscitation (TCPR) was independently associated with increased survival and favorable functional outcome after out of hospital cardiac arrest as effective as Bystander CPR and also reduction in time for first chest compression and helps lay rescuer to recognize cardiac arrest and gives appropriate compression depth and rate. But the study doesn't assess the rescuers knowledge on CPR. But as per, Mathiesen WT., et al., (2016)[80] who conducted a qualitative study in Norway found that rescuers experience emotional and social challenges, and struggle to cope in life after providing CPR in OHCA incidents and had concerns about the outcome for the cardiac arrest victim..

A bundle of researchers Roth GA.,et al., (2014)[81] , Tchwenko S., Fleming. E., Perry GS., (2013)**[82]** conducted a population survey in king country, USA and North Carolina revealed that most men who had an MI aged between 45- 79 years have at least one risk factor for MI, but less than half use aspirin and confirms that insufficient aspirin use among those with high cardiovascular risk or disease.

Khosravan S, Alami A, Hamzei A, Borna J., (2015)[83] **c**onducted a randomized clinical trial on airway management in pre hospital emergency care inferred that laryngeal mask airway is as effective as oropharyngial airway for pre-hospital airway management by paramedics during out of hospital cardio pulmonary emergencies.

A bunch of Indian researchers Amisha Patel., et al., (2017)[84] conducted a nationwide policy document analysis in India found the laws to guide pre hospital ACS care is largely absent, whereas Prabhakaran D., Huffman MD., (2017)[85] who conducted a qualitative analysis in Kerala revealed that individualized patient-based factors (general knowledge of ACS symptoms, socioeconomic position) and broader systems-based factors (ambulance networks, coordination of transport) affect pre-hospital ACS care in Kerala and also found that building an infrastructure for rapid and coordinated transport, multi- stakeholder policies may improve pre-hospital ACS care in India.

Savino PB., et al., (2015)[86] performed a literature review in California signifies that all agencies use aspirin (64% recommending 325mg, 24% recommending 162mg and 15% recommending either), as well as nitroglycerin and opiates in pre hospital and protocols vary across in California and also allowed the individual agencies to develop and implement their own protocols to improve the pre hospital chest pain care management.

Seidlerova J., (2014)[87] conducted a cross sectional survey on use of Home Blood Pressure Monitoring (HBPM) among hypertensive clients in Europe revealed that BP measurement devices available with more than half of patients and HBPM performed by 40% patients, while the ratio increases with the number of antihypertensive medication used, but as per Margolis KL, et al., (2013)[88], Lam JY., Guirguis LM., (2010)[89] who conducted a randomized trial in U.S reported that larger improvement in home BP telemonitoring with pharmacist management and significant decrease or control in BP . 60% of patients monitor their BP monthly, but less than 50% of patients practice home BP monitoring.

Brokmann JC., (2017)[90] conducted a comparative assessment among paramedics of EMS service of Aachen showed that the Tele medical approach led to less pronounced

blood pressure reductions and demonstrated improved medical history and better efficiency regarding the time requirements of physicians, and also found that tele medically guided antihypertensive care may be an alternative to conventional care especially for potentially underserved areas.

SECTION 2.3.3: CRITICAL REVIEWS RELATED TO KNOWLEDGE AND SKILL ON PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES

Multiple researchers AL Khayyal H., et al., (2016)[91] conducted a descriptive research design in Egypt showed that elders' knowledge about CHD risk factors were generally low. But as per, Khan NS.,(2017)[92] who conducted a cross sectional study among elderly population of UAE revealed that knowledge level of many of the symptoms and risk factors of CHD is unsatisfactory.

A bunch of researchers Hardeland C., et al., (2016)[93] conducted **a** prospective, interventional study in Norway showed the effectiveness of targeted simulation, education and feedback which improves the recognition of OHCA and reduced time to first chest compression. Whereas, Kim H.,Kim H, Suh E., (2016)[94] who conducted the randomized controlled trial (RCT) in South Korea reported that overall knowledge about cardio vascular disease, self efficacy, and performance of CPR significantly improved after completing the Patient centered CPR education (PCE) program, thereby encouraged to follow tailored PCE program in cardio vascular nursing practice.

Eldesouky EL, Gaballah SH., Al-Sabi R, Layla MS., Abdelhadi LMS., (2015)[95] conducted a quasi experimental study in Saudi Arabia inferred that training program for caregivers of cardiac patients at home had a positive impact on their knowledge and practice about CPR, whereas Varalakshmi E., (2016)[96] conducted **a** pre experimental study in Chennai identified that training module about CPR is more effective in improving the knowledge and skill in BLS among the care givers of cardiac clients which also significantly enhance the reduction of mortality rate among cardiac clients.

A handful of researchers Ozbilgin S., Akan M., Hanci V, Aygun C., Kuvaki B, (2015)[97] conducted a 21 Questionnaire survey among public in Turkey, revealed that 40.7% had received training in CPR and 3.6% performed bystander CPR, as per the

findings of telephonic survey where by Chair SY., Hung MS., Lui JC., Lee DT., Shiu IY, Choi KC (2014)[98], Rajapakse R, Marko Nac., Kersnik J.,(2010)[99] revealed that Lay public had poor knowledge on CPR and the knowledge is better in trained than untrained individuals and also found that majority of participants willing to correct and develop their knowledge and skill related to CPR which signifies that effective public CPR training programmes may increase the knowledge and awareness of CPR in the adult population.

Multiple researchers Urban J., Thode H., Stapleton E., Singer AJ., (2013)[100] conducted a prospective survey in Ireland revealed that only 23.3% had knowledge of Hands-Only CPR and most of the patients were interested to perform Hands-Only CPR and found that age, family monthly income, history of a cardiac related event in the family, previous CPR training were positively associated to perform Hands-Only CPR, but according to Blewer AL., et al., (2016)[101] who conducted the multi center cohort study in Pennsylvania found that targeted training of families is feasible in hospital and also benefits to secondary training at home where most SCA events take place and the simplified methods like video based instruction CPR training may promote broader dissemination and increase bystander delivery rates and mannequin based skill instruction provides better CPR performance.

A bunch of researchers Albarqouni L.,et al.,(2016)[102] conducted a cross-sectional study in German revealed that 98% of patients correctly recognized at least one AMI symptom, 1 in 3 patients believed that heart-attack is always accompanied with severe chest-pain, elderly patients and women were having less knowledge about atypical-symptoms. But according to Henriksson C., et al., (2012)[103] who conducted a multi centre study in Sweden showed that the traditional AMI symptoms well known by the public, where the majority of participants were aware about to call for an ambulance in case of chest pain and also found that high AMI knowledge shortened median delay time in seeking medical care.

Pradeep LP., (2012)[104] conducted a descriptive study among patients admitted in medical and cardiology wards, in Mumbai revealed that in pre test 54 % were aware about chest massage as the first action, 36 % were aware to stop activity immediately

after chest pain., 26% and 18 % were aware about Tab. Sorbitrate and Tab. Aspirin to be taken immediately after chest pain where as in post test majority of them gained adequate knowledge on medications. 80% of them were aware about medical help should be taken immediately after chest pain but many of them not addressed and also found that the planned teaching significantly improves the knowledge and performance among patients in reducing the risk of the disease.

Deaver UJ., Kanika, Crystal H., Jaswal P.,(2017)[105] conducted a quasi experimental study in rural area of north India revealed that planned teaching program was effective in enhancing both the knowledge and skill in self-monitoring of blood pressure among hypertensive clients.

Multiple researchers Saad S**.,** et al., in Pakistan (2017)[106]**,** Rajegowda ST., Pinto VJ., George P., (2017)[107] conducted a cross sectional study in India revealed that caregivers of stroke patients had good knowledge of stroke warning sign and risk factors and caregivers' education on stroke might be of great utility to spread the stroke awareness in society.

A bouquet of researchers Chiamaka OE., Hemamalini., (2016)[108], Pinto VJ, George P., (2017)**[107]** conducted a descriptive cross sectional study in south India revealed that hypertension was the most frequently recognized risk factor followed by lack of exercise, smoking, diabetes mellitus and stress and also identified that facial deviation, difficulty in talking, one side weakness were the warning signs of stroke and majority of hypertensive patients had moderate knowledge on risk factors and warning signs of stroke.

Sapna., Bhatia R, Sharma G, Gopichandran L.,(2016)[109] conducted a comparative study in New Delhi showed that majority of the patients were not found to have adequate knowledge on risk factors, warning signs and need for immediate treatment and hence an intense need to educate the population at risk for stroke regarding risk factors and warning signs and immediate treatment.

2.4 SUMMARY

The above literatures were selected to provide information on major prevalence of cardiac emergencies. Reviews also revealed that government policies plays a major role in preventing out of hospital cardiac emergencies, however the studies related to improving pre hospital management of cardiac emergencies were minimal. Hence, the research investigator strengthened the intervention package by providing information and training to the patients with chronic illness and their care givers to identify and to prevent the cardiac emergencies at home set up. During the above review of literature the investigator had felt difficulty in gathering Indian literatures pertaining to studies on pre hospital management of cardiac emergencies.

2.5 GAPS IN THE REVIWED LITERATURE

The Indian studies were done in minimal number of samples which did not show effective generalization of the results among patients with chronic illness and their caregivers. Several literature and studies are focusing on in hospital cardiac emergencies. There are very few studies on prevalence of out of hospital cardiac emergencies and pre hospital management of cardiac emergencies especially home management of cardiac emergencies and care giver’s role in pre hospital management of cardiac emergencies.

RESEARCH METHODOLOGY

The methodology is the significant part of any research study which will enable the researcher to project a blue print of the research. It describes the research design, variables, settings of the study, population, sample, inclusive and exclusive criteria for sample selection, sample size, sampling technique, development and description of the tool and plan for data analysis.

3.1 RESEARCH APPROACH

Quantitative research approach has been used for the study.

3.2 RESEARCH DESIGN

The research design used for the study is quasi experimental, non – equivalent control group pre test and post test research design based on **Polit and Hungler (2012)[110].**

SCHEMATIC REPRESENTATION OF QUASI –EXPERIMENTAL STUDY

Group	**Pre test (O_1)** **(**On the 1st day)	**Intervention (X)** (On the same day of pre test)	**Post test (O_2)** (On the 7th day)
Experimental group	Assess the pre test level of knowledge for patients with chronic illness and their care givers with the structured knowledge questionnaire and assess the pre test level of skill for the care givers using observational checklist.	**Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies:** ▪ **Lecture cum Discussion** using power point presentation on Emergency Preparedness Protocol. ▪ **Preparation of cardiac emergency kit** with the items of patient's medical information, general items, own medications list and medications, Emergency Preparedness Protocol **Demonstration and re demonstration** on the steps of Blood pressure monitoring on the patients and Adult BLS techniques on a mannequin. ▪ **Information booklet** regarding Emergency Preparedness Protocol for reinforcement.	Assess the post test level of knowledge for patients with chronic illness and their care givers with the structured knowledge questionnaire and assessment of post test level of skill for their care givers using observational checklist.
Control group		Usual hospital routine care	

3.3 VARIABLES

3.3.1 Independent Variable

Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

3.3.2 Dependent Variables

Level of Knowledge and Skill regarding pre hospital management of cardiac emergencies.

3.3.3 Extraneous Variables

a) For patients

It consists of demographic variables which include age, gender, education, religion, occupation, family monthly income, dietary pattern, history of co - morbid illness, dependency of the patient on caregivers.

b) For caregivers

It consists of demographic variables which include age, gender, education, occupation, degree of relationship with the patient, duration of time spent with the patient per day.

3.4 SETTING OF THE STUDY

The research settings were Government Hospitals in Chennai. The selected hospital for the experimental group was ESI Medical Hospital, Ayanavaram Chennai which is a 200 bedded hospital and for the control group was. Government Peripheral Hospital, Periyar Nagar, Chennai which is a 120 bedded hospital with inpatient strength of 25 – 50 patients per day in both the hospitals.

3.5 POPULATION

3.5.1 Target Population

All the patients with chronic illness and their caregivers admitted in hospitals, Chennai.

3.5.2 Accessible Population

All the patients with chronic illness and their care givers admitted in selected hospitals, Chennai.

3.6 SAMPLE

The patients with chronic illness and their caregivers who fulfilled the sample selection criteria.

3.7 SAMPLE SIZE

Samples of 120 (30 patients and 30 care givers in each experimental and control group).

3.8 CRITERIA FOR SAMPLE SELECTION

3.8.1 Inclusion Criteria

Patients

- with chronic illness such as diabetes mellitus, hypertension, chronic kidney disease for more than 6 months.
- who could understand Tamil or English.

Caregivers

- who takes care of the patient with chronic illness from the time of admission.
- who could understand Tamil or English.

3.8.2 Exclusion Criteria

Patients

- who had experienced with any cardiac emergency or cardiac illness.
- who had sensory and cognitive impairment.

Care givers

- who had sensory and cognitive impairment.

3.9 SAMPLING TECHNIQUE

Non – probability convenient sampling technique was used in the study. Patients with chronic illness like diabetes mellitus, hypertension, chronic kidney disease for more than 6months and their care givers were selected as samples.

3.10 DEVELOPMENT AND DESCRIPTION OF TOOL

After an extensive review of literature, discussion with experts and with the investigator's professional experience, the tool was developed to assess the knowledge on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers by using structured knowledge questionnaire and skill for the caregivers of patients with chronic illness by observational checklist.

The tool constructed in this study hast two parts:

3.10.1: Data collection Tool

3.10.2: Intervention Tool – Emergency Preparedness Protocol

3.10.1 DATA COLLECTION TOOL

SECTION A: ASSESSMENT OF DEMOGRAPHIC VARIABLES

This part consisted of structured questionnaire to assess the demographic variables of patients with chronic illness and their caregivers.

The demographic variables of patients which includes age, gender, education, religion, occupation, monthly income, dietary pattern, history of co-morbid illness, dependency of the patient on caregivers.

The demographic variables of caregivers which include age, gender, degree of relationship with the patient, education, occupation, duration of time spent with the patient per day.

SECTION B: ASSESSMENT OF KNOWLEDGE

This section consisted of a structured knowledge questionnaire to assess the level of knowledge.

A structured knowledge questionnaire which consisted of 25 multiple choice questions in 4 components about pre hospital management of cardiac emergencies which includes general information about cardiac emergencies, signs and symptoms, assessment techniques, emergency measures and use of cardiac emergency kit to handle cardiac emergencies at home.

The questions were formulated under the separate sub headings.

S.No.	Content	No. of Questions
1	General information	10
2	Signs and symptoms, assessment techniques	04
3	Emergency measures	09
4.	Cardiac emergency kit	02
	Total	**25**

Scoring keys

The correct answer was given "1" mark, and wrong and unattended answer was given "0" mark. The raw score was converted into % to interpret the level of knowledge. The overall score was 25, maximum score is 25 and the minimum score is 0.

Interpretation of level of knowledge

Scores	Level of Knowledge
75-100%	Adequate knowledge
51-74%	Moderately adequate knowledge
≤50%	Inadequate knowledge

SECTION C: ASSESSMENT OF SKILL

This part consists of dichotomous statement with "yes" or "no" as answer options regarding the steps of Blood pressure monitoring (6 steps) and Adult BLS techniques (12 steps).

Scoring keys

Each 'yes' option awarded with a score of "1" and each 'no' option was awarded as "0. The overall score is 18, maximum score is 18 and the minimum score is 0. The raw data was computed to interpret the level of skill.

Interpretation of level of skill

Scores	Level of Skill
75-100%	Good skill
51-74%	Fair skill
≤50%	Needs improvement in skill

3.10.2 INTERVENTION TOOL

The intervention tool consists of

- **Lecture cum Discussion** using power point presentation given on Emergency Preparedness Protocol like general information about cardiac emergencies, signs and symptoms, assessment findings, emergency measures to manage cardiac emergencies at home for 20 -30minutes for a group of 5 to 10 patients with chronic illness and their caregivers.
- **Preparation of cardiac emergency kit** with the items of patient's medical information, general items, own medications list and medications, Emergency Preparedness Protocol shown to a group of 5- 10 patients with chronic illness and their caregivers for 10mins.
- **Demonstration and re demonstration** of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin to a group of 5 to 10 care givers of patients with chronic illness for 10mins.
- **Information booklet** regarding Emergency Preparedness Protocol was given for reinforcement.

3.11 CONTENT VALIDITY

The content validity of the data collection tool and intervention tool was obtained from the field of expertise:

- Cardiologists – 2
- Medical – Surgical Nursing experts – 3

Experts suggested modifying some of the variables in the tool. Corrections were incorporated in the tool and after the modifications; the tool was used to evaluate the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre

hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai.

3.12 ETHICAL CONSIDERATIONS

Ethics is a system of moral values that is concerned with the degree to which the research procedures adheres to the professional, legal and social obligations to the study participants. **Polit and Hungler (2012)[110].**

The investigator considered and followed the ethical principles before preceding the research study.

- Ethical clearance from ICCR.
- Written consent from the head of the institution.
- Setting permission obtained from ESI Medical hospital Medical Director and Nursing Superintendent, Chennai and Government Peripheral hospital Medical Director and Nursing Superintendent, Chennai.
- Informed written consent obtained from the participants related to the study, purpose, type of data, nature of commitments, participations, procedure and potential benefits.
- Confidentiality pledge.
- Rights to withdraw / withhold the information.
- Investigators contact information.
- Potential benefits and risk.

1. BENEFICENCE

The investigator followed the fundamental ethical principle of beneficence by adhering to**:**

a. Freedom from harm and discomfort

The study was beneficial for the samples as it enhanced their knowledge and skill regarding pre hospital management of cardiac emergencies.

b. Protection from harm and discomfort

Participants were not subjected to unnecessary risk for harm and discomfort during the study period. The investigator explained the nature of the study to the samples and ensured that none of the samples were exploited or denied.

2. RESPECT FOR HUMAN DIGNITY

The investigator followed the second ethical principle of respect for human dignity. It includes the right to self-determination and the right to self -disclosure.

a. The Right to Self-determination

The investigator gave full freedom to the participants to decide voluntarily to participate in the study or to withdraw from the study and the right to ask questions at any time during the course of study.

b. The right to full disclosure

The investigator had fully described the nature of the study, the person's right to refuse participation and researcher's responsibilities based on which both oral and written consent was obtained from the participants.

3. JUSTICE

a. Right to Fair Treatment

The investigator selected the study participants based on the inclusion and exclusion criteria and divided them into experimental and control group. The investigator followed the rules and regulations of Institutional ethical committee, ICCR.

b. Right to Privacy

The investigator maintained the participant's privacy, confidentiality pledge and informed consent throughout the study.

4. CONFIDENTIALITY

The investigator maintained confidentiality of the data provided by the study participants.

3.13 RELIABILITY OF THE TOOL

Reliability of the tool was assessed by using Test- Retest method for knowledge and Inter-rater method for skill. Coefficient r –values were 0.87(knowledge) and 0.84(skill) and values were very high. The tool was considered to be highly reliable and practicable to implement in the main study. Hence, it could be utilized to evaluate the

effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai.

3.14 PILOT STUDY

The study was conducted in Sir Ivan Stedeford Hospital (Experimental group), Ambattur, Chennai and Essvee Hospital (Control group), Ambattur, Chennai after obtaining ethical committee clearance from ICCR. A formal written permission sought from the Principal, Omayal Achi College of Nursing and from the Medical Director and Nursing Superintendent in the concerned hospitals.

The investigator had selected each 3 samples of patients with chronic illness and their care givers in both experimental and control group who fulfilled the inclusion criteria through Non probability convenient sampling technique. A brief explanation was given regarding purpose of the study to the study participants and a written informed consent was obtained.

On the first day of the pilot study, the patients with chronic illness and their caregivers in the experimental group admitted in Sir Ivan Stedeford hospital were gathered and comfortably seated in a well ventilated room. Demographic details were obtained from the samples through the structured demographic profile. Then the investigator assessed the pretest level of knowledge regarding pre hospital management of cardiac emergencies using structured knowledge questionnaire for the patients with chronic illness and their caregivers and the skill on Blood pressure monitoring steps and Adult BLS techniques for the care givers of patients with chronic illness by using observational checklist. Following this, the intervention was given for 30 -45 minutes in which 20 minutes for structured teaching and 10 minutes for preparation of cardiac emergency kit and 10mins for demonstration and re demonstration on the steps of Blood pressure monitoring steps on the patient and Adult BLS techniques on a mannequin to a group of 5 to 10 care givers of patients with chronic illness.

Similarly, the next day the pre test was administered to the control group at Essvee hospital, Ambattur, Chennai the next day and usual hospital routine care was

carried out. The post test was conducted after 7 days using the same tool for both the experimental and control group respectively. The intervention was given for the control group after the completion of post test. An information booklet on Emergency Preparedness Protocol was given as reinforcement for both the groups.

The analysis of the pilot study revealed that:

- Using Mann-Whitney U-test to assess the posttest mean knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness in experimental and control group was 17.33 and 10.33 respectively which showed statistical significance at $p< 0.05$ level.
- Using Mann-Whitney U-test to assess the post test mean knowledge score regarding pre hospital management of cardiac emergencies among caregivers with chronic illness in experimental and control group was 21.00 and 12.67 respectively and it showed statistical significance at $p< 0.05$ level and posttest mean skill score among caregivers with chronic illness in experimental and control group was 14.00 and 4.33 respectively and it showed statistical significance at $p< 0.05$ level
- The 'r' value Correlation between post test mean knowledge score with skill score among caregivers of patients with chronic illness regarding pre hospital management of cardiac emergencies in the experimental group was 0.31 which showed significant fair correlation indicates as knowledge increases skill also increases fairly.

The result of pilot study revealed that the assessment and intervention tool was reliable, feasible and practicable to conduct the main study.

3.15 PROCEDURE FOR DATA COLLECTION

The main study was conducted after getting formal permission from the Principal, Omayal Achi College of Nursing and from the Medical Director and Nursing Superintendent in the concerned hospitals.

The study was conducted for a period of 4weeks from 02.01.18 – 31.01.18.The investigator selected ESI (200 bedded) Medical hospital, Ayanavaram, Chennai for experimental group and for the control group was Government Peripheral (120 bedded)

hospital, Periyar Nagar, Chennai and both hospitals with the inpatient strength of 25 – 50 patients per day. Hence a total of 60 patients + 60 caregivers (30 samples in each experimental and control group) were selected based on inclusion criteria using Non – probability convenient sampling technique.

From 02.01.18 to 16.01.18, the investigator met the experimental group study samples seated in a well ventilated room and briefly explained regarding the purpose of the study. After obtaining a written informed consent from both patients and their caregivers who participated in the study using a pledge of confidentiality and the demographic details were obtained from the samples through the structured demographic profile. Then the investigator assessed the pretest level of knowledge regarding pre hospital management of cardiac emergencies using structured knowledge questionnaire for the patients with chronic illness and their caregivers and the skill on Blood pressure monitoring steps and Adult BLS technique for the care givers of patients with chronic illness by using observational checklist. Following this, the intervention was given for 30 -45 minutes in which 20 minutes for structured teaching using power point and 10 minutes for preparation of cardiac emergency kit and 10mins for demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin. The samples were assigned with a serial number to maintain their information confidential. The post test was conducted on the 7^{th} day using the same tool.

The same procedure for data collection was followed for the control group from 17.01.18 to 31.01.18. The pre test was conducted and the normal hospital routine was carried out for the patients with chronic illness and their caregivers and the post test was conducted on the 7^{th} day of pre test followed by administration of intervention tool and for further enhancement on knowledge and skill both the groups were issued an information booklet on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

All ethical principles were adhered and followed throughout the course of the research study.

3.16 PLAN FOR DATA ANALYSIS

Data was analyzed by using both descriptive and inferential statistics.

Descriptive Statistics

1. Frequency and percentage distribution was used to analyze the demographic variables of patients with chronic illness and their caregivers.
2. Mean and standard deviation was used to analyze the pre test and post test level of knowledge and skill on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

Inferential Statistics

3. Paired ‘t’ test and unpaired ‘t’ test was used to compare the pre test and post test level of knowledge and skill on effectiveness of Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers.
4. Correlation coefficient was used to find the relationship between post test knowledge and skill scores between experimental and control group.
5. One way ANOVA, unpaired “t” and chi square was used to associate the mean differed level of knowledge and level of skill score with selected demographic variables.

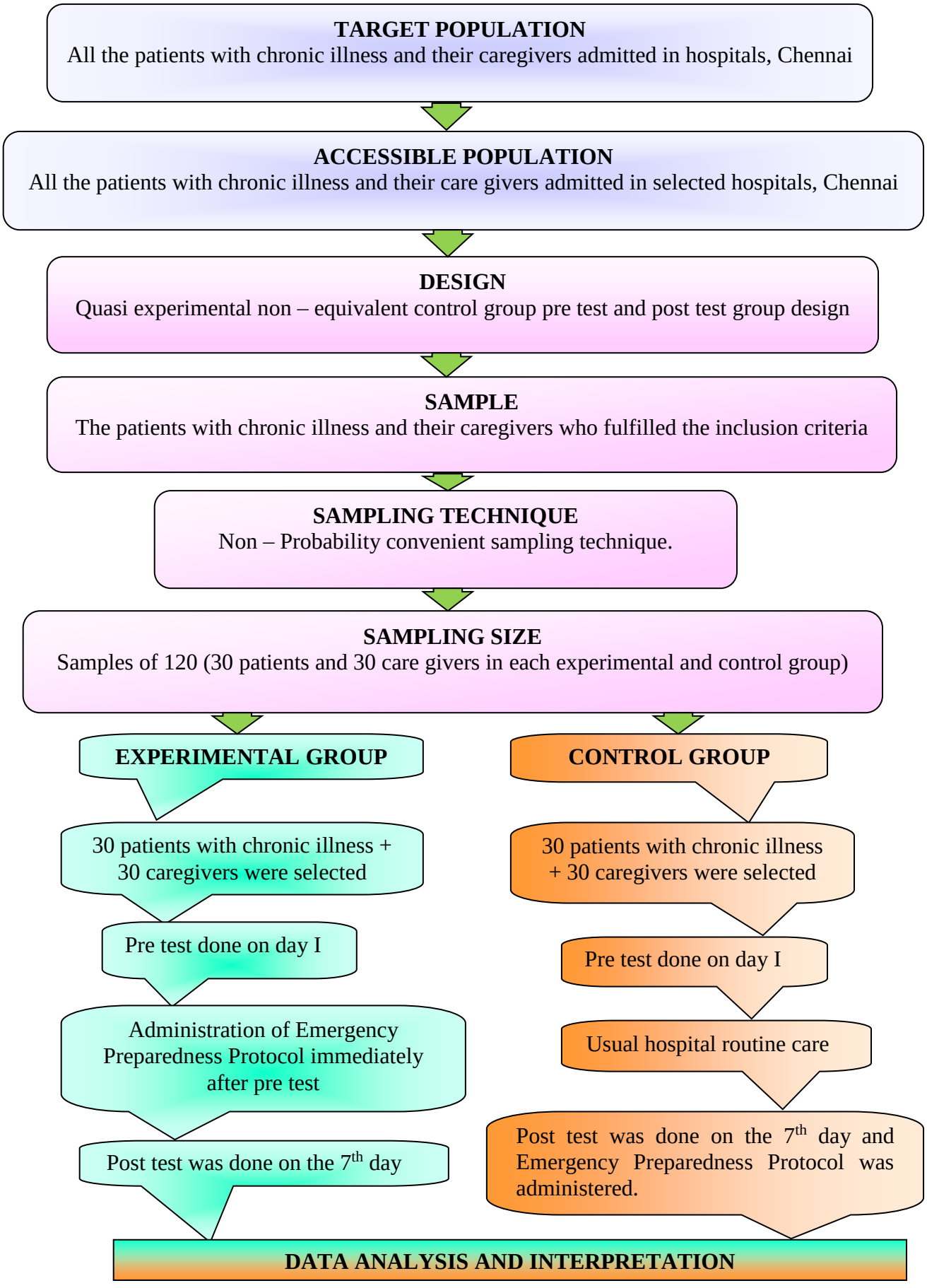

Fig. 3.1 SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

DATA ANALYSIS AND INTERPRETATION

The word analysis refers to the process of organizing and synthesizing the data in such a way that the research question can be answered and hypothesis tested. **(Polit and Hungler, 2012)[110]**

This chapter deals with analysis and interpretation of the data collected from 120 samples admitted at selected hospitals, Chennai, to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

The data collected were organized, tabulated and analyzed according to the objectives. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

ORGANIZATION OF THE DATA

Section 4.1: Description of demographic variables of patients with chronic illness in the experimental and control group.

Section 4.2: Description of demographic variables of caregivers of patients with chronic illness in the experimental and control group.

Section 4.3: Assessment of the pre test and post test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental and control group.

Section 4.4: Assessment of the pre test and post test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

Section 4.5: Assessment of effectiveness of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental and control group.

Section 4.6: Assessment of effectiveness of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among of caregivers of patients with chronic illness in the experimental and control group.

Section 4.7: Correlation of post test level of knowledge with skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

Section 4.8: Association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group.

Section 4.9: Association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group.

SECTION 4.1: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.1.1: Frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to age, gender, religion, type of family and dietary pattern.

N = 60

S.No	Demographic variables of patients		Experimental group (n=30)		Control group (n =30)		Chi –square value
			No.	%	No.	%	
1.	Age of the patients (in years)	40 -50	9	30.0	7	23.3	$\chi 2$=0.45 p=0.93(N.S)
		51 -60	12	40.0	12	40.0	
		61 -70	5	16.7	6	20.0	
		> 70	4	13.3	5	16.7	
2.	Gender	Male	15	50.0	15	50.0	$\chi 2$=0.00 p=1.00 (N.S)
		Female	15	50.0	15	50.0	
3.	Religion	Hindu	23	76.7	20	66.7	$\chi 2$=0.74 p=0.69 (N.S)
		Christian	5	16.6	7	23.3	
		Muslim	2	6.7	3	10.0	
4.	Type of family	Nuclear family	19	63.3	14	46.7	$\chi 2$=1.68 p=0.43 (N.S)
		Joint family	9	30.0	13	43.3	
		Extended family	2	6.7	3	10.0	
5.	Dietary pattern	Vegetarian	4	13.3	3	10.0	$\chi 2$=0.16 p=0.68 (N.S)
		Non vegetarian	26	86.7	27	90.0	

N.S = Not significant, p > 0.05 Not significant

Table 4.1.1 shows the frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to age, gender, religion, type of family and dietary pattern.

In experimental group few of the patients with chronic illness 40%(12) were in the age group of 51 -60 years, both males and females were equally participated, majority 76.7% (23) of them were Hindus, 63.3%(19) of them belongs to nuclear family, where as in control group, 40%(12) were in the age group of 51 – 60 years, both females and males 50%(15) were equally participated in the study, more than half 66.7%(20) of the patients were Hindus, nearly half 46.7% (14) of them belongs to nuclear family, majority 90%(27) of them were non – vegetarians in both the groups.

Table 4.1.2: Frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to education, occupation, family monthly income.

N=60

S.No	Demographic variables of patients		Experimental group (n=30)		Control group (n =30)		Chi –square value
			No.	%	No.	%	
6.	Education	Professionals or honours	1	3.3	1	3.3	χ^2=1.45 p=0.96(N.S)
		UG/PG	2	6.7	1	3.3	
		Intermediate	1	3.3	2	6.7	
		High school	9	30.0	8	26.7	
		Middle school	8	26.7	7	23.3	
		Primary school	7	23.3	7	23.3	
		Non – literate	2	6.7	4	13.4	
		Others	-	-	-	-	
7.	Occupation	Profession	2	6.7	1	3.3	χ^2=2.03 p=0.91(N.S)
		Semi Profession	3	10.0	2	6.7	
		Clerical, shop owner	3	10.0	5	16.7	
		Skilled	5	16.7	3	10.0	
		Semi Skilled	10	33.3	13	43.3	
		Unskilled	5	16.6	4	13.3	
		Others	2	6.7	2	6.7	
8.	Family monthly Income in Rupees.	≤ 5000	3	10.0	2	6.6	χ^2=1.33 p=0.72(N.S)
		5001 -15,000	17	56.7	20	66.7	
		15,001 -25,000	8	26.7	5	16.7	
		> 25,000	2	6.6	3	10.0	

N.S = Not significant, p > 0.05 Not significant

Table 4.1.2 shows the frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to education, occupation, family monthly income**.**

With regard to demographic variables, in experimental group 30%(9) were qualified with higher secondary level education and 33.3%(10) were doing semi skilled type of occupation and 56.7% (17) of them had their currently monthly income with the range of 5001 – 15,000 rupees where as in control group, 26.7% (8) of them were qualified with higher secondary level education and 43.3% (13) were doing semi skilled type of occupation, most of them 66.7% (20) had their family monthly income with the range of Rs.5001 – Rs.15,000.

Table 4.1.3: Frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to chronicity of disease and dependency of the patient on caregivers.

N=60

S.No	Demographic variables of patients		Experimental group (n=30)		Control group (n =30)		Chi –square value
			No.	%	No.	%	
9.	**Chronicity of disease in years and Regular treatment/ Follow up**						χ^2=1.54 p=0.46 (N.S)
	Diabetes mellitus	< 5 years	13	59.1	12	44.4	
		5 -10 years	6	27.3	12	44.4	
		>10 years	3	13.6	3	11.2	
	Regular treatment	Yes	19	86.4	26	96.3	χ^2=1.59 p=0.20 (N.S)
		No	3	13.6	1	3.7	
	Hypertension	< 5 years	16	72.7	11	61.1	χ^2=0.86 p=0.64 (N.S)
		5 -10 years	5	22.7	5	27.8	
		>10 years	1	4.6	2	11.1	
	Regular treatment	Yes	18	81.8	14	77.8	χ^2=0.10 p=0.75 (N.S)
		No	4	18.2	4	22.2	
	Chronic kidney disease(CKD)	< 5 years	11	100	8	88.9	χ^2=1.28 p=0.25 (N.S)
		5 -10 years	-	-	1	11.1	
		>10 years	-	-	-	-	
	Regular treatment	Yes	10	90.9	6	66.7	χ^2=1.81 p=0.17 (N.S)
		No	1	9.1	3	33.3	
10.	**Dependency of the patient on caregivers**	Wholly dependent	-	-	-	-	χ^2=0.27 p=0.60 (N.S)
		Partially dependent	12	40.0	14	46.7	
		Independent	18	60.0	16	53.3	

N.S = Not significant, p > 0.05 Not significant

Table 4.1.3 shows the frequency and percentage distribution of demographic variables of patients with chronic illness in experimental and control group with respect to chronicity of disease and dependency of the patient on caregivers**.**

With regard to demographic variables, in experimental group more than half of the patients in which 59.1% (13) diabetes mellitus patients, 72.7% (16) hypertensive patients, all the CKD patients had less than 5 years of chronicity with majority of the

patients with chronic illness had regular treatment / follow up, where as in control group more than half of the patients in which 44.4% (12) diabetes mellitus patients, 66.1% (11) hypertensive patients, 88.9% (8) CKD patients had less than 5 years of chronicity with majority of the patients with chronic illness had regular treatment / follow up. More than half of the patients were independent in doing their daily activities in both the groups.

Table 4.1.1 – 4.1.3 presented the demographic variables of patients with chronic illness in the experimental and control group.

SECTION 4.2: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF CAREGIVERS OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.2.1: Frequency and percentage distribution of demographic variables of caregivers of patients with chronic illness in experimental and control group with respect to age, gender, degree of relationship with the patient.

N=60

S.No	Demographic variables of caregivers		Experimental group (n=30)		Control group (n =30)		Chi –square value
			No.	%	No.	%	
1.	Age in years	21 – 30	6	20.0	3	10.0	χ^2=3.44 p=0.22 (N.S)
		31 – 40	7	23.3	12	40.0	
		41 – 50	12	40.0	8	26.7	
		> 50	5	16.7	7	23.3	
2.	Gender	Male	9	30.0	12	40.0	χ^2=0.65 p=0.41 (N.S)
		Female	21	70.0	18	60.0	
3.	Degree of relationship with the patient	First degree	27	90.0	27	90.0	χ^2=0.60 p=1.00 (N.S)
		Second degree	3	10.0	3	10.0	
		Others	-	-	-	-	

N.S = Not significant, p > 0.05 Not significant

Table 4.2.1 shows the frequency and percentage distribution of demographic variables of caregivers of patients with chronic illness in experimental and control group with respect to age, gender, and degree of relationship with the patient.

In experimental group, 40.0% (12) of the caregivers were between the age group of 41 -50 years where as in control group 40%(12) between the age group of 31- 40 years, most 70%(21) of them in experimental group and 60%(18) in control group were females and majority 90%(27) of the caregivers had first degree relationship with the patients in both the groups.

Table 4.2.2: Frequency and percentage distribution of demographic variables of caregivers of patients with chronic illness in experimental and control group with respect to education, occupation, duration of time spent with the patient per day.

N=60

S.No	Demographic variables of caregivers		Experimental group (n=30)		Control group (n =30)		Chi –square value
			No.	%	No.	%	
4.	Education	Professionals or Honours	1	3.3	1	3.3	χ^2=4.82 p=0.56 (N.S)
		UG/PG	8	26.7	4	13.3	
		Intermediate	4	13.3	4	13.3	
		High school	8	26.7	10	33.3	
		Middle school	3	10.0	8	26.7	
		Primary school	4	13.3	2	6.7	
		Non – literate	2	6.7	1	3.3	
		Others	-	-	-	-	
5.	Occupation	Profession	7	23.3	2	6.7	χ^2=9.96 p=0.12 (N.S)
		Semi Profession	2	6.7	5	16.7	
		Clerical, shop owner	1	3.3	6	20.0	
		Skilled	3	10.0	4	13.3	
		Semi Skilled	12	40.0	7	23.3	
		Unskilled	2	6.7	4	13.3	
		Others	3	10.0	2	6.7	
6.	Duration of time spent with the patient per day in hours	1 -4	0	0.0	0	0.0	χ^2=4.44 p=0.10 (N.S)
		5 -8	4	13.3	8	26.7	
		9 -12	17	56.7	19	63.3	
		> 12	9	30.0	3	10.0	

N.S = Not significant, p > 0.05Not significant

Table 4.2.2 depicts the frequency and percentage distribution of demographic variables of caregivers of patients with chronic illness in experimental and control group with respect to education, occupation, duration of time spent with the patient per day.

With regard to demographic variables in experimental group, 26.7% (8) of the caregivers were qualified either with under graduate degree or higher secondary level

education, where as in control group 33.3% (10) of them were qualified with higher secondary level education. More than half 56.7% (17) of the caregivers in experimental group and 63.3% (19) of them in control group had spent 9 – 12hours per day with the patients with chronic illness at home.

Table 4.2.1 – 4.2.2 depicted the demographic variables of caregivers of patients with chronic illness in the experimental and control group.

SECTION 4.3: ASSESSMENT OF THE PRE TEST AND POST TEST LEVEL OF KNOWLEDGE REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.3.1: Frequency and percentage distribution of pre test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness in the experimental and control group.

N=60

S. No.	Level of Knowledge	Experimental group (n=30)						Control group (n=30)					
		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)	
		n	%	n	%	n	%	n	%	n	%	n	%
1	General information	25	83.3	5	16.7	0	0.0	25	83.3	5	16.7	0	0.0
2	Signs and symptoms, assessment techniques	27	90.0	3	10.0	0	0.0	27	90.0	3	10.0	0	0.0
3	Emergency measures	29	96.7	1	4.3	0	0.0	28	93.3	2	6.7	0	0.0
4	Cardiac emergency kit	27	90.0	3	10.0	0	0.0	24	80.0	6	20.0	0	0.0
	Total	27	90.0	3	10.0	0	0.0	26	86.7	4	13.3	0	0.0

Table 4.3.1 denotes the frequency and percentage distribution of pre test level of knowledge among patients with chronic illness in the experimental and control group.

With regard to pre test level of knowledge, majority 90% (27) of the patients with chronic illness in the experimental group and 86.7% (26) of them in control group had inadequate knowledge on pre hospital management of cardiac emergencies.

Table 4.3.2: Frequency and percentage distribution of post test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness in the experimental and control group.

N=60

S. No.	Level of Knowledge	Experimental group (n=30)						Control group (n=30)					
		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)	
		n	%	n	%	n	%	n	%	n	%	n	%
1	General information	0	0.0	7	23.3	23	76.7	23	76.7	7	23.3	0	0.0
2	Signs and symptoms, assessment techniques	0	0.0	12	40.0	18	60.0	25	83.3	5	16.7	0	0.0
3	Emergency measures	0	0.0	13	43.3	17	56.7	26	86.7	4	13.3	0	0.0
4	Cardiac emergency kit	0	0.0	8	26.7	22	73.3	22	73.3	8	26.7	0	0.0
	Total	0	0.0	10	33.3	20	66.7	24	80.0	6	20.0	0	0.0

Table 4.3.2 states the frequency and percentage distribution of post test level of knowledge among patients with chronic illness in the experimental and control group**.**

With regard to post level of knowledge, in the experimental group most 66.7% (20) of the patients gained adequate knowledge, 33.3%(10) of them had moderately adequate knowledge , where as in control group majority 80%(24) of patients continued to have inadequate knowledge in post test on pre hospital management of cardiac emergencies.

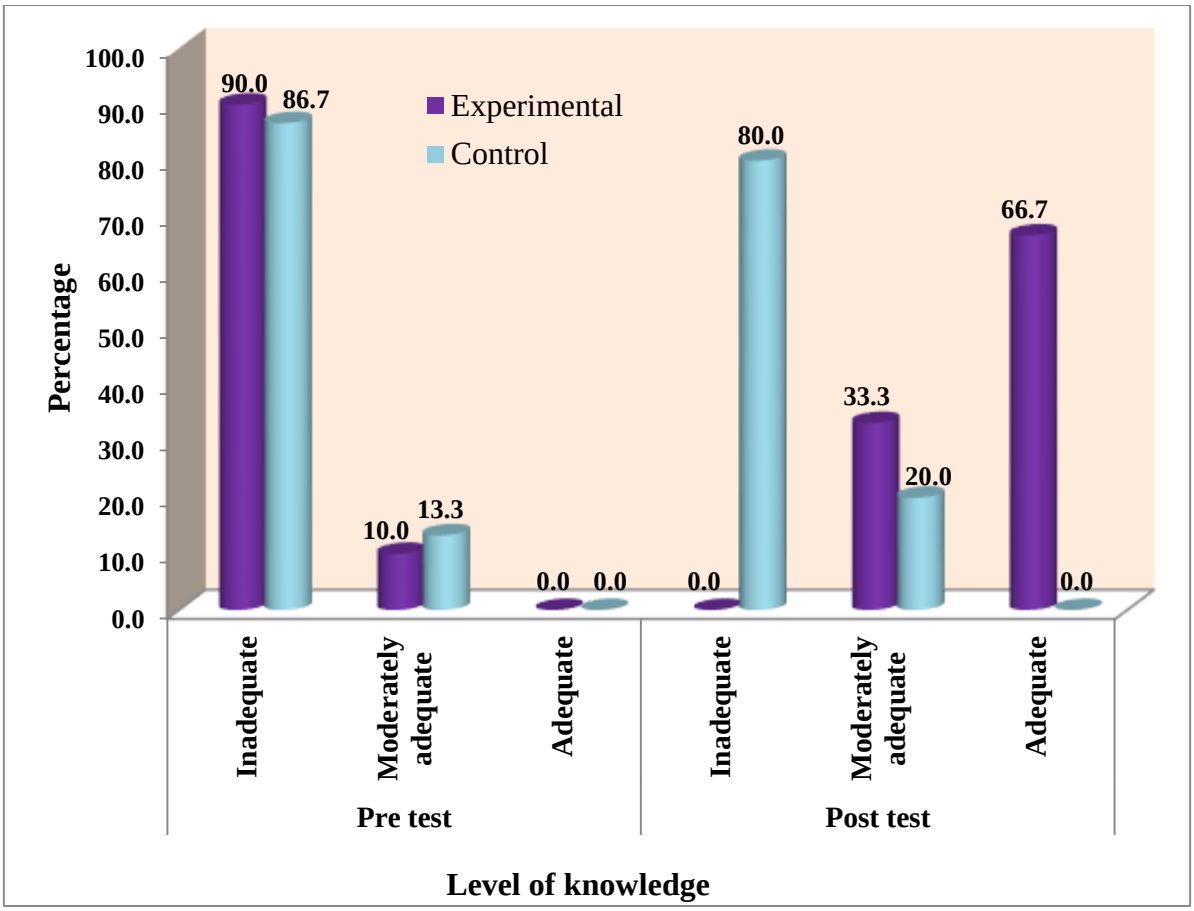

Fig 4.3.3: Percentage distribution of overall level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness in the experimental and control group.

With regard to the post test level of knowledge score showed very high statistical significance at $p<0.001$, indicating that both the groups were homogenous in the pre test but after administration of Emergency Preparedness Protocol, the experimental group showed a very high statistical significant improvement in the overall level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness than the control group patients.

The result signifies that Emergency Preparedness Protocol was effective in improving the knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness.

Table 4.3.4: Frequency and percentage distribution of pre test level of knowledge regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

N=60

S. No.	Level of Knowledge	Experimental group (n=30)						Control group (n=30)					
		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)	
		n	%	n	%	n	%	n	%	n	%	n	%
1.	General information	23	76.7	7	23.3	0	0.0	21	70.0	9	30.0	0	0.0
2.	Signs and symptoms, assessment techniques	27	90.0	3	10.0	0	0.0	25	83.3	5	16.7	0	0.0
3.	Emergency measures	28	93.3	2	6.7	0	0.0	26	86.7	4	13.3	0	0.0
4.	Cardiac emergency kit	22	73.3	8	26.7	0	0.0	20	66.7	10	33.3	0	0.0
	Total	25	83.3	5	16.7	0	0.0	23	76.7	7	23.3	0	0.0

Table 4.3.4 denotes the frequency and percentage distribution of pre test level of knowledge among caregivers of patients with chronic illness in the experimental and control group.

With regard to pre test level of knowledge, majority 83.3% (25) of the caregivers of patients with chronic illness in experimental group and in control group, majority 76.7% (23) of them had inadequate knowledge regarding pre hospital management of cardiac emergencies.

Table 4.3.5: Frequency and percentage distribution of post test level of knowledge regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

N=60

S. No.	Level of Knowledge	Experimental group (n=30)						Control group (n=30)					
		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)		Inadequate (<50%)		Moderately adequate (50 – 75%)		Adequate (>75%)	
		n	%	n	%	n	%	n	%	n	%	n	%
1.	General information	0	0.0	4	13.3	26	86.7	20	66.7	10	33.3	0	0.0
2.	Signs and symptoms, assessment techniques	0	0.0	9	30.0	21	70.0	23	76.7	7	23.3	0	0.0
3.	Emergency measures	0	0.0	10	33.3	20	66.7	25	83.3	5	16.7	0	0.0
4.	Cardiac emergency kit	0	0.0	5	16.7	25	83.3	20	66.7	10	33.3	0	0.0
	Total	0	0.0	7	23.3	23	76.7	22	73.3	8	26.7	0	0.0

Table 4.3.5 signifies the frequency and percentage distribution of post test level of knowledge among caregivers of patients with chronic illness in the experimental and control group.

With regard to post test level of knowledge, most 76.7%(23) of the caregivers gained adequate knowledge, 23.3%(7) of them had moderately adequate knowledge in experimental group, where as in control group most 73.3%(23) of the caregivers continued to have inadequate knowledge regarding pre hospital management of cardiac emergencies in post test.

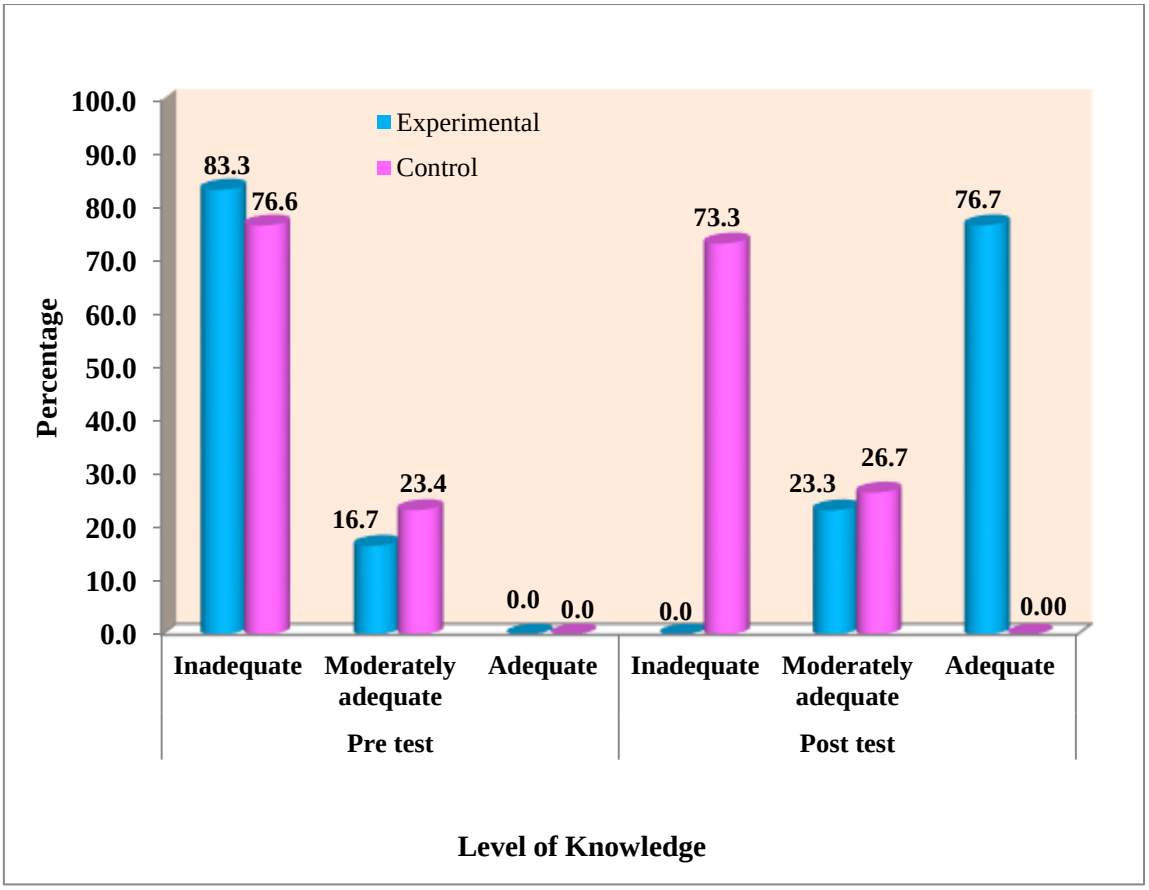

Fig 4.3.6: Percentage distribution of overall level of knowledge regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

With regard to overall level of knowledge, most 76.7%(23) of the caregivers in the experimental group had gained adequate level of knowledge, where as in control group most 73.3% (22) of them continued to have inadequate knowledge regarding pre hospital management of cardiac emergencies.

The post test level of knowledge showed a very high statistical significance at $p<0.001$, indicating the both the groups were homogenous in the pre test but after administration of Emergency Preparedness Protocol, the experimental group showed a very high statistical significant improvement in the overall level of knowledge regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness.

Table 4.3.1 – 4.3.7 denotes the pre test and post test level of knowledge among patients with chronic illness and their caregivers in the experimental and control group.

SECTION 4.4: ASSESSMENT OF THE PRE TEST AND POST TEST LEVEL OF SKILL REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG CAREGIVERS OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.4.1: Frequency and percentage distribution of pre test and post test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group. N=60

Test	Skill	Experimental group (n=30)						Control group (n=30)					
		Needs improvement in skill (<50%)		Fair skill (50 – 75%)		Good skill (>75%)		Needs improvement in skill (<50%)		Fair skill (50 -75%)		Good skill	
		n	%	n	%	n	%	n	%	n	%	n	%
Pre test	Blood pressure monitoring steps	30	100.0	0	0.0	0	0.0	30	100.0	0	0.0	0	0.0
	Adult BLS techniques	30	100.0	0	0.0	0	0.0	30	100.0	0	0.0	0	0.0
	Total	30	100.0	0	0.0	0	0.0	30	100.0	0	0.0	0	0.0
Post test	Blood pressure monitoring steps	0	0.0	4	13.3	26	86.7	28	93.3	2	6.7	0	0.0
	Adult BLS techniques	0	0.0	10	33.3	20	66.7	28	93.3	2	6.7	0	0.0
	Total	0	0.0	7	23.3	23	76.7	28	93.3	2	6.7	0	0.0

Table 4.4.1 shows the frequency and percentage distribution of pre test and post test level of skill among caregivers of patients with chronic illness in the experimental and control group.

In pre test, all of the caregivers of patients with chronic illness in both the groups need improvement in skill on Blood pressure monitoring steps and Adult BLS techniques.

In post test, most 76.7 %(23) of the caregivers of patients with chronic illness in the experimental group had gained good skill after demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques, where as in control group, majority 93.3% (28) of caregivers continued with needs improvement in skill regarding Blood pressure monitoring steps and Adult BLS techniques.

Table 4.4.2: Frequency and percentage distribution of overall level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

N=60

Test	Level of skill	Experimental group (n=30)		Control group (n=30)		Chi square test
		n	%	n	%	
Pretest	Needs improvement in skill	30	100.0	30	100.0	χ^2=0.41 p=0.51(N.S)
	Fair skill	-	-	-	-	
	Good skill	-	-	-	-	
	Total	30	100.0	30	100.0	
Posttest	Needs improvement in skill	-	-	28	93.33	**χ^2=43.05 p=0.001***(S)**
	Fair skill	7	23.33	2	6.67	
	Good skill	23	76.67	-	-	
	Total	30	100.00	30	100.0	

N.S = Non – significant, S= Significant, p < 0.001*** very high significant

Table 4.4.2 inferred the frequency and percentage distribution of overall level of skill among caregivers of patients with chronic illness in the experimental and control group.

With regard to pre test, all the caregivers need improvement in skill on Blood pressure monitoring steps and Adult BLS techniques in both the groups. In post test, most 76.67 %(23) of the caregivers of patients with chronic illness in the experimental group had gained good skill after demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin than the control group.

The post level of skill showed a very high statistical significance at p < 0.001, indicates that both the groups were homogenous in the pre test but after administration of Emergency Preparedness Protocol and demonstration and re demonstration of Blood pressure monitoring steps and Adult BLS techniques, the experimental group showed a very high statistical significant improvement in the overall level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness.

Table 4.4.1 – 4.4.2 illustrated the pre test and post test level of skill among caregivers of patients with chronic illness in the experimental and control group.

SECTION 4.5: ASSESSMENT OF EFFECTIVENESS OF EMERGENCY PREPAREDNESS PROTOCOL ON KNOWLEDGE REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.5.1 Comparison of pre test and post test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers within the experimental and control group.

N=60

Group		Comparison of Mean value of Knowledge				Mean difference	Paired 't' Value
		Pretest		Posttest			
		Mean	SD	Mean	SD		
Experimental group	Patients	10.02	2.30	19.57	2.60	9.55	**t=23.71 p=0.001*** (S)**
	Caregivers	11.27	3.00	20.09	1.56	8.82	**t=16.78 p=0.001*** (S)**
Control group	Patients	10.32	2.17	11.17	2.26	0.85	t=1.89 p=0.06 (N.S)
	Caregivers	11.60	2.59	12.06	2.66	0.46	t=1.67 p=0.10 (N.S)

N.S = Non – significant, S= Significant, p < 0.001*** very high significant

Table 4.5.1 depicted the comparison of pre test and post test level of knowledge score among patients with chronic illness and their caregivers within the experimental and control group.

The comparison of pre test and post test scores of knowledge among patients with chronic illness and their caregivers within the experimental and control group using Paired 't' test revealed that the calculated 't' value in the experimental group patients was 23.71, for care givers 16.78 which showed a very high statistical significance at $p<0.001$ level where as in control group, the calculated 't' value was 1.89 for patients and 1.67 for the caregivers, which showed no statistical significance which evidently signifies that Emergency Preparedness Protocol is effective in enhancing the knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers.

Table 4.5.2 Comparison of pre test and post test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers between the experimental and control group.

N=60

Variables		Test	Group				Mean difference	Unpaired 't' Value
			Experimental group (n=30)		Control group (n=30)			
			Mean	SD	Mean	SD		
Knowledge	Patients	Pretest	10.02	2.30	10.32	2.17	0.30	t=0.53 p=0.60(N.S)
		Posttest	19.57	2.60	11.17	2.26	8.40	**t=13.32 p=0.001***(S)**
	Caregivers	Pretest	11.27	2.35	11.60	2.07	0.33	t=0.57 p=0.56 (N.S)
		Posttest	20.09	1.56	12.06	2.66	8.03	**t=14.28 p=0.001***(S)**

Table 4.5.2 denoted the comparison of pre test and post test level of knowledge among patients with chronic illness and their caregivers between the experimental and control group.

The comparison of pre test mean difference score of knowledge among patients with chronic illness and their caregivers between the experimental and control group using independent 't' test, revealed that there was no statistical significance. Whereas, the comparison of post test mean difference score of knowledge, the calculated unpaired 't' value was 13.32 for patients with chronic illness and 14.28 for their caregivers which showed a very high statistical significance at $p<0.001$ level in the experimental group.

The above findings signifies that the administration of Emergency Preparedness Protocol was effective in improving the knowledge of the patients with chronic illness and their care givers in the experimental group regarding pre hospital management of cardiac emergencies.

Table 4.5.1 – 4.5.2 displayed the effectiveness of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental and control group.

SECTION 4.6: ASSESSMENT OF EFFECTIVENESS OF EMERGENCY PREPAREDNESS PROTOCOL ON SKILL REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG CAREGIVERS OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table.4.6.1: Comparison of pre test and post test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness within the experimental and control group.

N=60

Group	Comparison of Mean Value				Mean difference	Paired 't' Value
	Pre test		Post test			
	Mean	SD	Mean	SD		
Experimental group	5.47	2.15	14.00	1.96	8.53	**t=13.43 p=0.001*** (S)**
Control group	5.67	2.60	6.10	2.55	0.43	t=0.32 p=0.74 (N.S)

N.S = Non –significant, S = Significant, p < 0.001***very high significant

Table 4.6.1 denoted the comparison of pre test and post test level of skill among caregivers of patients with chronic illness within the experimental and control group.

The comparison of pre test and post test scores of skill among caregivers of patients with chronic illness within the experimental and control group using Paired 't' test revealed that the calculated 't' value in the experimental group caregivers was 13.43, which showed a very high statistical significance at p<0.001 level where as in control group, the calculated 't' value was 0.32, which showed no statistical significance which revealed that Emergency Preparedness Protocol and demonstration of Blood pressure monitoring steps and Adult BLS steps were effective in enhancing the skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

Table.4.6.2: Comparison of pre test and post test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness between the experimental and control group.

N=60

Variables	Test	Comparison of Mean Value				Mean difference	Unpaired 't' Value
		Experimental group (n=30)		Control group (n=30)			
		Mean	SD	Mean	SD		
Skill	Pretest	5.47	2.15	5.67	2.60	0.20	t=0.32 p=0.74 (N.S)
	Post test	14.00	1.96	6.10	2.55	7.90	**t=13.43 p=0.001***(S)**

N.S = Non –significant, S = Significant, p < 0.001***very high significant

Table 4.6.2 depicted the comparison of pre test and post test level of skill among caregivers of patients with chronic illness between the experimental and control group.

The comparison of pre test mean difference score of skill among caregivers of patients with chronic illness between the experimental and control group using independent 't' test, revealed that there was no statistical significance. Whereas, the comparison of post test mean difference score of skill, the calculated unpaired 't' value was 13.43 which showed a very high statistical significance at p<0.001 level in the experimental group.

The above findings signifies that the administration of Emergency Preparedness Protocol and demonstration and re demonstration of Blood pressure monitoring steps and Adult BLS techniques were effective in improving the skill of the care givers of patients with chronic illness in the experimental group regarding pre hospital management of cardiac emergencies.

Table 4.6.1 – 4.6.2 displayed the effectiveness of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

SECTION 4.7: CORRELATION OF POST TEST LEVEL OF KNOWLEDGE WITH SKILL REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG CAREGIVERS OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 4.7.1: Correlation of post test level of knowledge score with post test level of skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group.

N=60

Test	Group	Variables	Mean	SD	'r' value	Inference
Post test	**Experimental group**	Knowledge	8.83	2.88	**r=0.46 p=0.01** (S)**	There is a **significant positive moderate correlation** between knowledge score and skill score.
		Skill	8.53	2.45		
	Control group	Knowledge	0.46	0.95	r=0.14 p=0.32 (N.S)	There is a no significant correlation between knowledge score and skill score.
		Skill	0.43	1.38		

**p< 0.01 = highly significant, S=significant, N.S= non - significant

Table 4.6.1 shows the correlation of post test level of knowledge score with post test level of skill score among caregivers of patients with chronic illness in the experimental group and control group.

The result concluded that the calculated Karl Pearson's Correlation Coefficient value of 'r'= 0.46, indicates moderate positive correlation signifying that an improvement in knowledge had a positive influence on increasing the skill among caregivers of patients with chronic illness, whereas in control group, 'r'= 0.14, indicates no significant correlation between knowledge and skill score.

This evidently proves that the enhancement of the knowledge of caregivers of patients with chronic illness through Emergency Preparedness Protocol significantly improved the skill of the caregivers of patients with chronic illness by enhancing their mastery of performing Blood pressure monitoring steps and Adult BLS techniques.

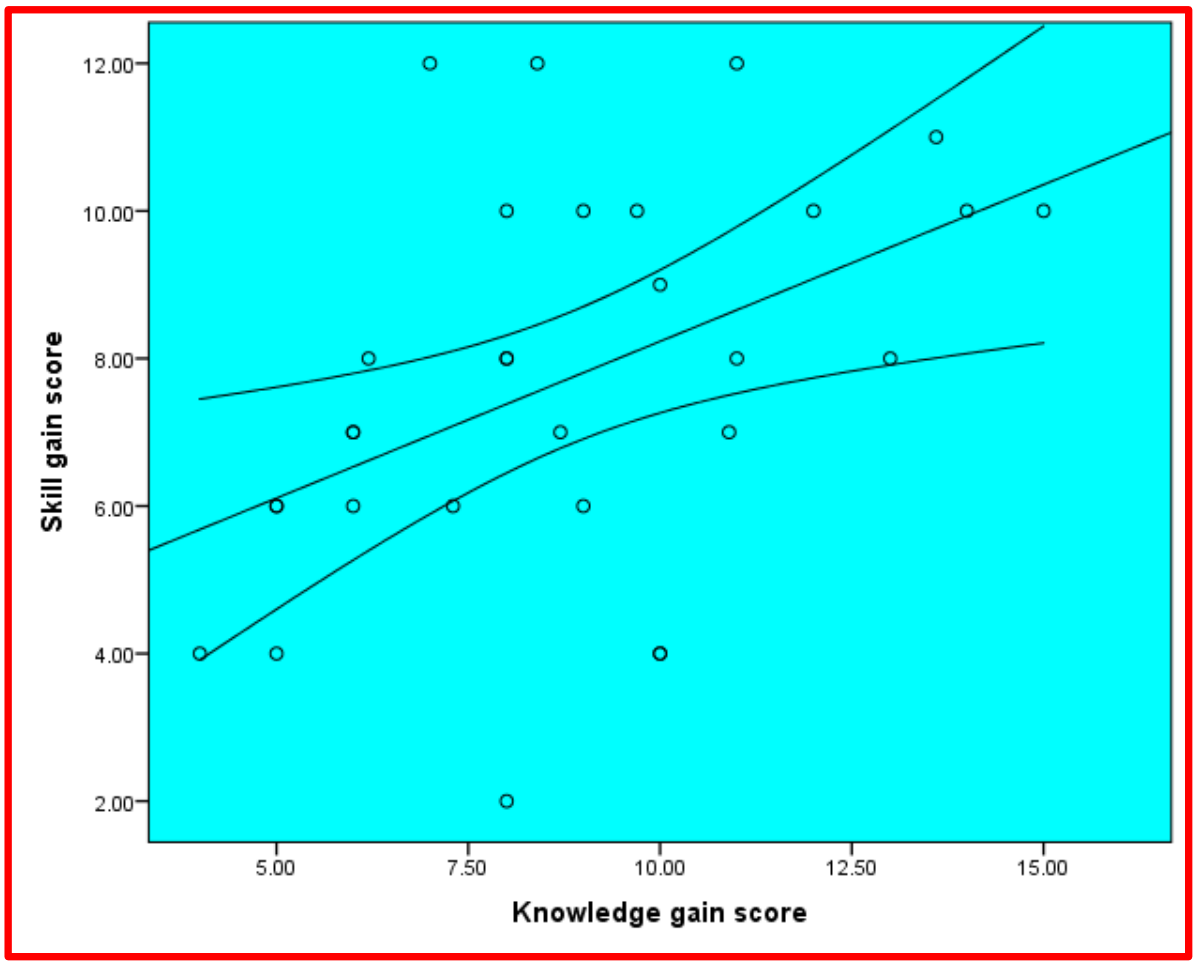

Fig.4.7.2 Correlation of post test level of knowledge score with skill score among caregivers of patients with chronic illness in the experimental group.

Table 4.7.1 and Fig. 4.7.2 presented the correlation of post test level of knowledge score with skill score among caregivers of patients with chronic illness in the experimental group and control group.

SECTION 4.8: ASSOCIATION OF SELECTED DEMOGRAPHIC VARIABLES WITH THE MEAN DIFFERED KNOWLEDGE SCORE REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS IN THE EXPERIMENTAL GROUP

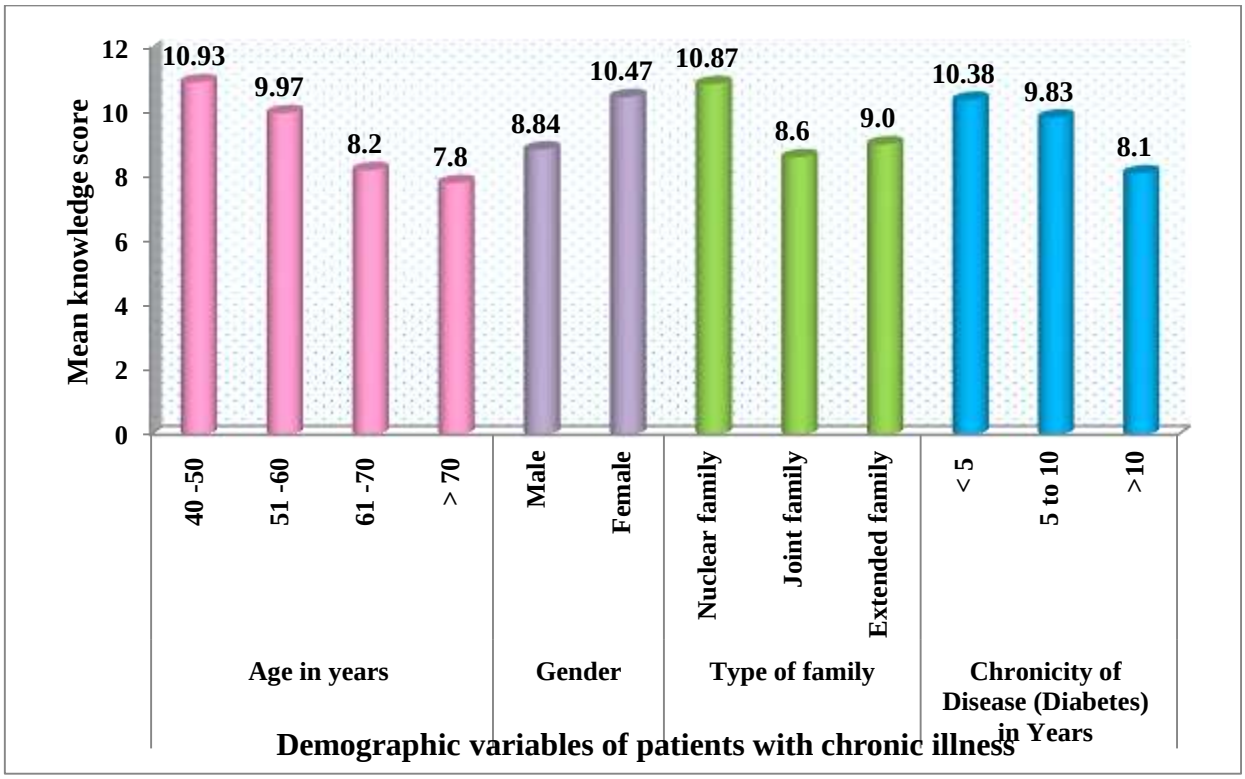

Fig 4.8.1: Association of selected demographic variables with the mean differed knowledge score among patients with chronic illness in the experimental group.

Association of selected demographic variables among patients with regards to age in years, gender, type of family, chronicity of diabetes mellitus had statistical significance which reveals that younger age patients, female patients those who were from nuclear family patients and diabetic patients who had less than 5 years of chornicity had gained more knowledge score in comparison with other variables in the experimental group.

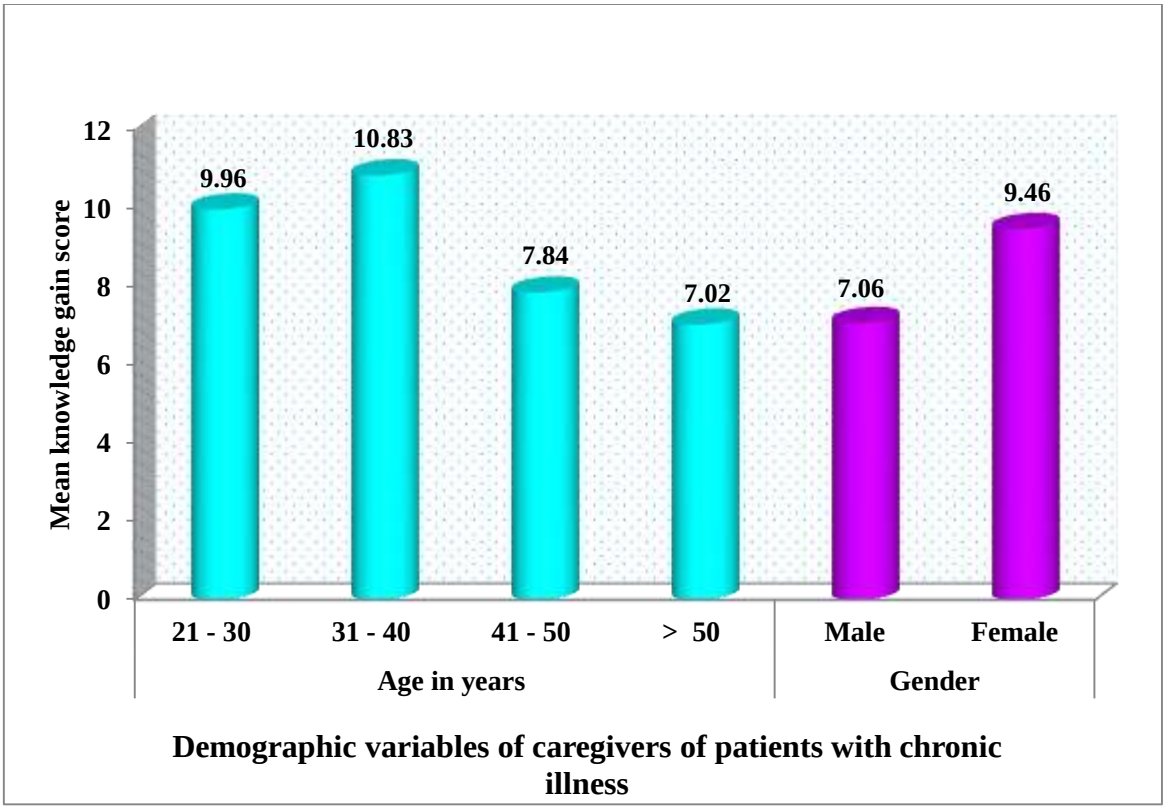

Fig. 4.8.2 Association of selected demographic variables with the mean differed knowledge score among care givers of patients with chronic illness in the experimental group.

Association of selected demographic variables with regards to age in years, gender had statistical significance which reveals that younger age caregivers those who were females had gained more knowledge score than other variables in the experimental group.

Fig. 4.8.1 – 4.8.2 depicted the association of selected demographic variables with mean differed knowledge score among patients with chronic illness and their caregivers in the experimental group.

SECTION 4.9: ASSOCIATION OF SELECTED DEMOGRAPHIC VARIABLES WITH THE MEAN DIFFERED SKILL SCORE REGARDING PRE HOSPITAL MANAGEMENT OF CARDIAC EMERGENCIES AMONG CAREGIVERS OF PATIENTS WITH CHRONIC ILLNESS IN THE EXPERIMENTAL GROUP.

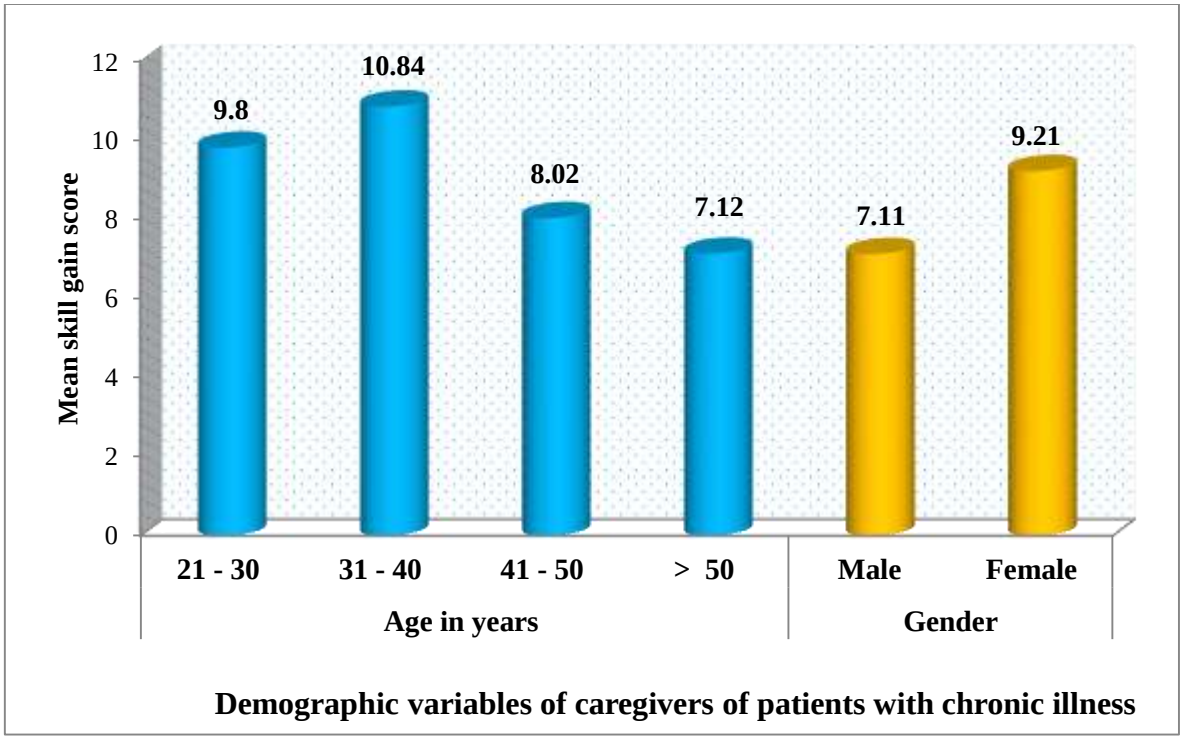

Fig 4.9.1: Association of selected demographic variables with the mean differed skill score among care givers of patients with chronic illness in the experimental group.

Association of selected demographic variables of caregivers with regard to age in years, gender had statistical significance which reveals that younger age caregivers aged between 31-40 years, those who were females had gained more skill score on Blood pressure monitoring steps and Adult BLS techniques in comparison with other variables in the experimental group.

DISCUSSION

This chapter discusses the findings of the study, based on the objectives. The current study was undertaken to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai.

5.1 The findings of the demographic variables among patients with chronic illness and their care givers in the experimental and control group

The demographic variables of patients with chronic illness in both the experimental and control group as shown in the table 4.1.1 to 4.1.3 depicts that in the experimental group, 40% (12) were in the age group of 51 – 60years of which 76.7%(23) belongs to Hindu religion and 19(63.3%) were from nuclear family and 86.7% (26) were non – vegetarians, 30%(9) had completed their higher secondary school education, 33.3%(10) were semi skilled workers, 56.7% (17) had family monthly income of 5001-15000 rupees, 59.1% (13) diabetes patients, 72.7% (16) hypertensive patients and 100% (11) CKD patients had chronicity of less than 5 years and most 90.9%(10) of them were on regular treatment and follow up. 60% (18) were independent in doing activities. Equal number of males and females were present in both the groups.

In the control group, 40%(12) were in the age group of 51 – 60years of which 66.7%(20) belongs to Hindu religion and 46.7%(14) were from nuclear family and 90%(27) were non – vegetarians, 26.7%(8) had completed their higher secondary school education ,43.3% (13) were semi skilled workers, 66.7%(20) had family monthly income of 5001-15000 rupees, 44.4% (12) of the diabetes patients, 72.7%(16) hypertensive patients and 100% (11) of the CKD patients had chronicity of less than 5 years and 66.7% (6) of them were on regular treatment and follow up. 53.3% (16) were independent in doing activities. Equal number of males and females were present in both the groups.

The demographic variables of caregivers of patients with chronic illness in both the experimental and control group as shown in the table 4.2.1 to 4.2.2 depicts that in the

experimental group, 40%(12) were in the age group of 41 – 50years of which 70% (21) were females and most of the care givers were first degree relatives, 26.7%(8) had completed their undergraduate degree and higher secondary school education, 40%(12) were semi skilled workers and 56.7% (17) had spent 9 -12 hours of time with the patient per day.

In the control group, 40% (12) were in the age group of 31 – 40years which makes them differed from the experimental group, of which 60%(18) were females, 33.3%(10) had completed their higher secondary school education, 23.3%(7) were semi skilled workers and 63.3% (19) had spent 9 -12 hours of time with the patient per day.

The above findings supported by a community based cross sectional study conducted by Khalequzzaman Md.,et al., (2017)[43] Naseem S, Khattak UK, Ghazanfar H, Irfan A (2016)[44] at the urban setting in Bangladesh and Pakistan revealed that hypertension, diabetes, dyslipidemia, tobacco use and obesity were the prevalent risk factors of NCDs which indicates the burden of NCD among urban poor and also found that urbanization in South East Asia has resulted in mushrooming of coronary heart disease, diabetes and respiratory diseases.

The above findings were consistent with the cross sectional study conducted by Hailemariam T., (2014)[34] and Hasan SM., Khan HLR., Chowdhury AW., Sabah KMN., (2013)[49] among patients in Ethiopia and Bangladesh signifies that most of the medical emergency admissions were due to cardiac emergency in ER, the mean age group was above 40 years and prevalence of cardiovascular emergency is high in general and the leading cause was myocardial infarction, valvular heart diseases. Also found hypertension and diabetes were the most common co - morbidities.

5.2 The first objective was to assess and compare the pre and post-test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group and control group.

Table 4.3.1 to 4.3.2 and Fig.4.3.3 showed the frequency and percentage distribution of pre test and post test level of knowledge regarding pre hospital

management of cardiac emergencies among patients with chronic illness in the experimental and control group. In the experimental group most 90%(27) of the patients with chronic illness had inadequate knowledge and 10% (3) of them had moderately adequate knowledge in the pre test , after administering Emergency Preparedness Protocol 66.7% had gained adequate knowledge, 33.3% had moderately adequate knowledge in the post test, where as in control group most 86.7% (26) of the patients with chronic illness had inadequate knowledge in the pre test and 80%(24) continued to have inadequate knowledge in the post test.

The above findings infers that both groups were homogenous in the pre test, but after administration of Emergency Preparedness Protocol, the experimental group showed a very high statistical significant improvement in the overall level of knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness.

Table 4.3.4 to 4.3.5 and Fig.4.3.6 stated the frequency and percentage distribution of pre test and post test level of knowledge regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

In the experimental group most 83.3% (25) of the caregivers of patients with chronic illness had inadequate knowledge and 16.7% (5) of them had moderately adequate knowledge in the pre test , after administering Emergency Preparedness Protocol 76.7% (23) of the caregivers had gained adequate knowledge and 23.3% (7) had moderately adequate knowledge in the post test, where as in control group most 76.7% (23) of the caregivers had inadequate knowledge in the pre test and 73.3% (22) of them continued to have inadequate knowledge in the post test.

It indicates that both groups were homogenous in the pre test but after administration of Emergency Preparedness Protocol, the experimental group showed a very high statistical significant improvement in the overall level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers.

The above findings were consistent with Hardeland C., et al., (2016)[93] conducted **a** prospective, interventional study in Norway among OHCA patients showed the effectiveness of targeted simulation, education, and feedback which improves the recognition of OHCA and reduced time to first chest compression.

5.3 The second objective was to assess and compare the pre and post-test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.

Table 4.4.1 – 4.4.2 inferred the frequency and percentage distribution of pre test and post test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental and control group.

In the experimental group, all the caregivers of patients with chronic illness 100%(30) needs improvement in skill in the pre test , after administering Emergency Preparedness Protocol and demonstration and re demonstration of Blood pressure monitoring steps and Adult BLS techniques, most 76.7%(23) of the caregivers had gained good skill and 23.3%(7) of them had fair skill in the post test, where as in control group all the caregivers of patients with chronic illness needs improvement in skill in the pre test and majority 93.3% (28) of them continued to with needs improvement in skill in the post test. The mean post test level of skill score was relatively high in the experimental group than the control group.

It indicates that both groups were homogenous in the pre test, but after administration of Emergency Preparedness Protocol, demonstration and re demonstration of Blood pressure monitoring steps and Adult BLS techniques, the experimental group showed a very high statistical significant improvement in the overall level of skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

The above findings were supported by Deaver UJ., Kanika, Crystal H., Jaswal P., (2017)[105] conducted a quasi experimental study in rural areas of north India found that planned teaching programme was effective in enhancing both the knowledge and skill in self-monitoring of blood pressure among hypertensive clients.

The findings were consistent with Varalakshmi E., (2016)[96] who conducted a pre experimental one group pre test and post test study in Chennai, identified that training module about CPR is more effective in improving the knowledge and skill in BLS among the care givers of cardiac clients and also significantly enhanced the reduction of mortality rate among cardiac clients.

5.4 The third objective was to assess the effectiveness of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group and control group.

Table 4.5.1 showed the comparison of pre test and post test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers within the experimental and control group.

The comparison of pre test and post test scores of knowledge within the experimental and control group using Paired ‘t’ test revealed that the calculated ‘t’ value in the experimental group patients was 23.71, for care givers 16.78 which showed a very high statistical significance at $p<0.001$ level where as in control group, the calculated ‘t’ value was 1.89 for patients and 1.67 for the caregivers, which showed no statistical significance which evidently signifies that administration of Emergency Preparedness Protocol was effective in enhancing the knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers in the experimental group.

Table 4.5.2 denoted the comparison of pre test and post test level of knowledge among patients with chronic illness and their caregivers between the experimental and control group.

The comparison of pre test mean difference score of knowledge among patients with chronic illness and their caregivers between the experimental and control group using independent ‘t’ test, revealed that there was no statistical significance. Whereas, the comparison of post test mean difference score of knowledge, the calculated unpaired ‘t’ value was 13.32 for patients with chronic illness and 14.28 for their

caregivers which showed a very high statistical significance at p<0.001 level in the experimental group.

The above findings signifies that the administration of Emergency Preparedness Protocol was effective in improving the knowledge of the patients with chronic illness and their care givers regarding pre hospital management of cardiac emergencies in the experimental group.

The above findings were consistent with Pradeep LP., (2012)[104] conducted a descriptive study among MI patients admitted in medical and cardiology wards, in Mumbai revealed that in pre test 54 % were aware about chest massage as the first action, 36 % aware to stop activity immediately after chest pain., Only 26% and 18 % aware about Tab. Sorbitrate and Tab. Aspirin respectively which is to be taken immediately after chest pain where as in post test majority of them gained adequate knowledge on medications.. Post test results showed 98 percent improvement in the knowledge and became aware of the modification in diet, exercise, regular medicine and follow up and also found that the planned teaching significantly improves the knowledge and performance among patients in reducing the risk of the disease.

Multiple researchers Ozbilgin S., Akan M., Hanci V, Aygun C., Kuvaki B., (2015)[97]conducted a 21 Questionnaire survey method among public in a Turkey revealed that 40.7% had received training in CPR and 3.6% performed bystander CPR and found that knowledge is better in trained than untrained individuals.

The conceptual framework adopted for the study was integrating the concepts of Stuffle Beam's CIPP Model and Von Bertalanffy's General System Model which supported the study and was helpful for the Nurse investigator to accomplish the study through an organized process. At the beginning, the investigator collected demographic variables from the patients with chronic illness and their care givers as an input which is helpful to identify the goal, then as an input evaluation, the pre test was conducted for the patients and their caregivers in a group, followed by the development of the intervention tool as through put and as the process the administration of Emergency

Preparedness Protocol and evaluated the product by conducting the post test and the product outcome was evaluated.

The study results showed that Emergency Preparedness Protocol was effective in improving the level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers in the experimental group than control group.

Hence the **NH_1** stated earlier that **"There is no significant effect of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers"** was not accepted for experimental group and accepted for control group.

5.5 The forth objective is to assess the effectiveness of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.

Table 4.6.1 denoted the comparison of pre test and post test level of skill among caregivers of patients with chronic illness within the experimental and control group.

The comparison of pre test and post test scores of skill among caregivers of patients with chronic illness within the experimental and control group using Paired 't' test revealed that the calculated 't' value in the experimental group caregivers was 13.43, which showed a very high statistical significance at $p<0.001$ level where as in control group, the calculated 't' value was 0.32, which showed no statistical significance which revealed that Emergency Preparedness Protocol and demonstration of Blood pressure monitoring steps and Adult BLS steps were effective in enhancing the skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

Table 4.6.2 depicted the comparison of pre test and post test level of skill among caregivers of patients with chronic illness between the experimental and control group.

The comparison of pre test mean difference score of skill among caregivers of patients with chronic illness between the experimental and control group using independent ‘t’ test, revealed that there was no statistical significance. Whereas, the comparison of post test mean difference score of skill, the calculated unpaired ‘t’ value was 13.43 which showed a very high statistical significance at $p<0.001$ level in the experimental group.

The above findings signifies that the administration of Emergency Preparedness Protocol and demonstration and re demonstration of Blood pressure monitoring steps and Adult BLS techniques were effective in improving the skill of the care givers of patients with chronic illness in the experimental group regarding pre hospital management of cardiac emergencies than control group.

Hence the **NH_2** stated earlier that “**There is no significant effect of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness”** was not accepted for the experimental group and accepted for the control group.

This is supported by Kim H.,Kim H, Suh E., (2016)[94] conducted a randomized controlled trial (RCT) on the effect of Patient centered CPR education (PCE) on knowledge, self-efficacy, and performance in a cardiac emergency of family caregivers of cardiac patients in South Korea reported that overall knowledge about cardio vascular disease, self efficacy, and performance of CPR followed by instructor guided CPR training and re education given after 2 weeks via telephone significantly improved after completing the PCE program.

5.6 The fifth objective was to correlate the post test level of knowledge score with skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.

Table 4.7.1 showed the correlation of post test level of knowledge score with post test level of skill score regarding pre hospital management of cardiac emergencies

among caregivers of patients with chronic illness in the experimental group and control group.

Fig.4.7.2 displayed the correlation of post test level of knowledge score with skill score among caregivers of patients with chronic illness in the experimental group.

Correlation between post test knowledge and skill score on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group, 'r' value shows 0.46 which indicates moderate positive correlation, whereas in control group, 'r'= 0.14, indicates no significant correlation between knowledge and skill score signifying that an improvement in knowledge has a positive influence on increasing the skill among caregivers of patients with chronic illness in the experimental group.

This is supported by Eldesouky EL, Gaballah SH., Al-Sabi R, Layla M S., Abdelhadi LMS., (2015)[95] conducted a quasi experimental study among caregivers of cardiac patients at home in Saudi Arabia inferred that training program for caregivers had a positive impact on their knowledge and practice and also found that there were a statistically significant mild positive correlation between caregivers' knowledge and practice scores which mean when caregivers' knowledge improved their practice also improved.

Hence the **NH_3** stated earlier that, **"There is no significant correlation of post test level of knowledge and skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental group and control group"** was not accepted for the experimental group and accepted for the control group.

5.7 The sixth objective is to associate the selected demographic variables with mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group.

Fig.4.8.1 inferred the association of selected demographic variables with the mean differed knowledge score among patients with chronic illness in the experimental group.

Age of the patients, gender, type of the family and chronicity of diabetes mellitus less than 5years showed statistical significance. This indicated that there was a statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness aged between 51 to 60 years and those who were females, living in a nuclear family and diabetic patients had less than 5years of chronicity in comparison to the other variables in the experimental group.

Fig.4.8.2 inferred the association of selected demographic variables with the mean differed knowledge score among care givers of patients with chronic illness in the experimental group.

Age in years, gender of the caregivers showed a statistical significance. This indicates that there was a statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness aged between 31 to 40 years and those who were females in comparison to the other variables in the experimental group.

Thus the **NH_4** that was stated earlier that, **"There is no significant association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers in the experimental group"** was not accepted for the selected demographic variables of the patients such as age, gender and type of family, chronicity of diabetes mellitus and demographic variables of care givers such as age, gender had gained more mean knowledge score regarding pre hospital management of cardiac emergencies and accepted for other variables in the experimental group.

This is supported with Urban J., Thode H., Stapleton E., Singer AJ.,(2013)[100] conducted a prospective survey among adult patients in Ireland revealed that only 23.3% had knowledge of Hands-Only CPR and most of the patients had interest to perform Hands-Only CPR and also found that age, family monthly income, history of a cardiac related event in the family, previous CPR training were positively associated to perform Hands-Only CPR.

5.8 The seventh objective is to associate the selected demographic variables with mean differed skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group.

Fig.4.9.1 denotes the association of selected demographic variables with the mean differed skill score among care givers of patients with chronic illness in the experimental group.

Age of the caregivers, gender showed statistical significance. This indicates that there was a significant improvement in the level of skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness aged between 31 to 40 years, those who were females in comparison to the other variables in the experimental group.

This is consistent with the multi center cohort study done by Blewer AL., et al., (2016)[101] among family members of inpatients in Pennsylvania revealed that targeted training of families is feasible in hospital and also benefits to secondary training at home where most SCA events take place and also found that simplified methods for CPR training like video - based instruction may promote broader dissemination and increase bystander delivery rates in addition to that mannequin based skill instruction provides better CPR performance.

Hence the **NH_5** stated earlier that "**There is no significant association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental group**" was not accepted for the selected demographic variables of care givers of patients with chronic illness such as age, gender and accepted for the other variables in the experimental group.

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 SUMMARY

Cardiovascular diseases (CVDs) are the leading cause of disability and premature deaths worldwide accounting for 15million deaths in 2015. Cardiac emergencies often present in an emergency situation, which needs prompt recognition and actions to reduce the mortality and increase the chance of survival after an emergency event. OHCA is one of the most dreadful events leading to over 90% of mortality rate. "Time is gold" has always been the cornerstone of cardiovascular emergency management. Teaching people about the symptoms of impending cardiac arrest and the actions to be taken can save lives. When caring for the chronic illness patients, be alert to the patient's psychosocial adaptation to this sudden "Brush with death and also about "Time bomb" mentality regarding fear of cardiac emergencies and their care givers are likely to experience the same feelings. [111]

The investigator felt and be attuned to the specific needs of the chronic illness patients and their caregivers on pre hospital management of cardiac emergencies, by keeping this in view after an extensive review of literature, expert's guidance from the field of medical and surgical nursing enabled the investigator to design the methodology, develop tools and to plan for the intervention.

The statement of the problem was

A quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai.

The objectives of the study were

1. To assess and compare the pre and post-test level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group and control group.

2. To assess and compare the pre and post-test level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.
3. To assess the effectiveness of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.
4. To assess the effectiveness of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness.
5. To correlate the post test level of knowledge score with skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group and control group.
6. To associate the selected demographic variables with mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers in the experimental group.
7. To associate the selected demographic variables with mean differed skill score regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group.

The null hypotheses formulated were

NH_1 : There is no significant effect of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers.

NH_2: There is no significant effect of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

NH_3: There is no significant correlation of post test level of knowledge and skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

NH_4 : There is no significant association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers.

NH_5: : There is no significant association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness.

Review of literature was done from primary and secondary sources which provided a base for selection of problem. Professional experience and expert's guidance from the field of Medical and Surgical Nursing provided a strong foundation for the study. It also strengthened the ideas for the conceptual frame work aided to design the methodology and develop the tool for data collection.

In view of explaining and relating various aspects of the study, the investigator had adopted conceptual framework by integrating the concepts of **Stuffle Beam's CIPP Model and Von Berttalannfy's General System Model.**

The researcher adopted a quasi experimental non – equivalent control group pre test and post test research design to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers. 120 samples (30 patients + 30 caregivers in each experimental and control group) were selected using Non – probability convenient sampling technique. The tool constructed for the data collection consists of two parts:

PART A: DATA COLLECTION TOOL

Section A: Assessment of demographic variables

Section B: Knowledge questionnaire

Section C: Observational checklist

The tool for data collection had 3 sections.

Section A: Personal data sheet was used to collect the demographic variables. It consists of the demographic variables of patients which include age, gender, education, religion, occupation, monthly income, dietary pattern, history of co- morbid illness, dependency of the patient on caregivers. The demographic variables of caregivers which include age, gender, and degree of relationship with the patient, education, occupation, duration of time spent with the patient per day.

Section B: In the structured knowledge questionnaire, 25 questions were formulated under separate sub headings to assess the level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers. Participants were asked to select the suitable answer from the four options given which was formulated by the investigator.

Section C: An observational checklist was used to assess the level of skill regarding Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin among caregivers of patients with chronic illness which was developed by the investigator.

PART B: INTERVENTION TOOL

- **Lecture cum Discussion** using power point presentation given on Emergency Preparedness Protocol like general information about cardiac emergencies, signs and symptoms, assessment findings, emergency measures to manage cardiac emergencies at home for 20 - 30minutes for a group of 5 to 10 patients with chronic illness and their caregivers.
- **Preparation of cardiac emergency kit** with the items of patient's medical information, general items, own medications list and medications, Emergency Preparedness Protocol shown to a group of 5 - 10 patients with chronic illness and their caregivers for 10mins.
- **Demonstration** and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin to a group of 5 to 10 care givers of patients with chronic illness for 10mins.
- **Information booklet** regarding Emergency Preparedness Protocol information was given for reinforcement.

The pilot study was conducted in different settings. The study was conducted in Sir Ivan Stedeford Hospital (Experimental group), Ambattur, Chennai and Essvee Hospital (Control group), Ambattur, Chennai. The analysis of the pilot study showed the effectiveness of Emergency Preparedness Protocol on pre hospital management of cardiac emergencies among patients with chronic illness in experimental and control group was 17.33 and 10.33 respectively which showed statistical significance at $p< 0.05$ level.

The post test mean knowledge score regarding pre hospital management of cardiac emergencies among caregivers with chronic illness in experimental and control group was 21.00 and 12.67 respectively which showed statistical significance at $p<0.05$ level and posttest mean skill score regarding pre hospital management of cardiac emergencies among caregivers with chronic illness in experiment and control group was 14.00 and 4.33 respectively which showed statistical significance at $p<0.05$ level. The reliability score were 'r' = 0.87 for structured knowledge and 'r' = 0.84 for skill. The result of pilot study revealed that the assessment and intervention tool was reliable, feasible and practicable to conduct the main study.

The ethical aspect of research was maintained throughout the study by obtaining ethical committee clearance from the ICCR, formal permission from the authorities and written consent from the patients with chronic illness and their caregivers who participated in the study.

The study was conducted for a period of 4weeks from 02.01.18 – 31.01.18. The investigator selected ESI Medical hospital, Ayanavaram, Chennai which is a 200 bedded hospital for Experimental group and for the control group was Government Peripheral hospital, Periyar Nagar, Chennai which is a 120 bedded hospital with the inpatient strength of 25 – 50 patients per day in both the hospitals. Hence a total of 60 patients + 60 caregivers (30 samples in each experimental and control group) were selected based on inclusion criteria using Non – probability convenient sampling technique.

From 02.01.18 to 16.01.18, the investigator met the experimental group study samples seated in a well ventilated room and briefly explained regarding the purpose of the study. After obtaining a informed written consent from both patients and their caregivers who were participated in the study using a pledge of confidentiality. Demographic details were obtained from the samples through the structured demographic profile. Then the investigator assessed the pre test level of knowledge regarding pre hospital management of cardiac emergencies using structured knowledge questionnaire for the patients with chronic illness and their caregivers and the skill on Blood pressure monitoring steps and Adult BLS techniques for the care givers of patients with chronic illness by using observational checklist. Following this, the intervention

was given for 30 - 45 minutes in which 20 minutes for structured teaching and 10 minutes for preparation of cardiac emergency kit and 10mins for demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin. The samples were assigned with a serial number to maintain their information confidential. On the 7th day after pre test, the investigator conducted the post test using the same tool. Daily data were collected nearly from 6 -7 samples.

The same procedure for data collection was followed for the control group and the normal hospital routine was carried out for the patients with chronic illness and their caregivers. The investigator administered the Emergency preparedness protocol regarding pre hospital management of cardiac emergencies on the completion of post test. An information booklet was issued for both the experimental and control group for the enhancement of knowledge and skill which focuses an overview of Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies.

Major findings of the study

The data was analyzed by using descriptive and inferential statistics. In the experimental group, the patients with chronic illness post test knowledge mean score was 19.57with S.D of 2.60 and in the control group the post test knowledge mean score was 11.17 with S.D of 2.26 and the calculated unpaired 't' value was 13.32 at $p< 0.001$ level which showed a very high statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies between the experimental and control group.

Also in the caregivers of patients with chronic illness post test knowledge mean score was 20.09 with S.D of 1.56 and in the control group the post test knowledge mean score was 12.06 with S.D of 2.66 and the calculated unpaired 't' value was 14.28 at $p<0.001$ level which showed a very high statistical significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies between the experimental and control group.

Both groups were homogenous in the pre test but after administration of Emergency Preparedness Protocol, the experimental group showed very highly

significant improvement in the overall level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers.

The study results showed that Emergency Preparedness Protocol education had an impact on improving the level of knowledge of the patients with chronic illness and their care givers and thus showed the effectiveness of the intervention tool in the experimental group than control group.

Hence the **NH_1** stated earlier that **"There is no significant effect of Emergency Preparedness Protocol on knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers."** was not accepted.

In the experimental group, the caregivers of patients with chronic illness post test skill mean score was 14.00 with S.D of 1.96 and in the control group the post test skill mean score was 6.10 with S.D of 2.55 and the calculated unpaired 't' value was 13.43 at $p<0.001$ level which showed a very high statistical significant improvement in the level of skill regarding pre hospital management of cardiac emergencies among caregivers of patients with chronic illness in the experimental group caregivers than the control group.

Hence the **NH_2** stated earlier that "**There is no significant effect of Emergency Preparedness Protocol on skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness"** was not accepted.

The correlation of post test knowledge score was 8.83 with S.D was 2.88 and the skill mean score was 8.53 with the S.D of 2.45. The calculated Karl Pearson correlation coefficient 'r' value 0.46 which was highly statistical significance at $p<0.01$ indicates moderate positive correlation, whereas in control group the calculated 'r' value was 0.14 which had no statistical significance, signifying that an improvement in knowledge had a positive influence on increasing the skill among caregivers of patients with chronic illness in the experimental group than control group.

Hence the **NH_3** stated earlier that, **"There is no significant correlation of post test level of knowledge and skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness"** was not accepted for the experimental group and accepted for the control group.

The analysis using chi square test, association of selected demographic variables of patients with the mean differed score of knowledge regarding pre hospital management of cardiac emergencies showed statistical significance with age, gender, type of family and chronicity of diabetes. This indicated that there was significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies among patients with chronic illness in the experimental group aged between 40 to 50 years and those who were females, living in a nuclear family and diabetic patients had less than 5years of chronicity in comparison to the other variables in the experimental group.

Association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies showed statistical significance with age and gender of the caregivers. This indicates that there was significant improvement in the level of knowledge regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental group aged between 31 to 40 years those who were females in comparison to the other variables in the experimental group.

Hence the **NH_4** stated earlier that **"There is no significant association of selected demographic variables with the mean differed knowledge score regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers in experimental group"** was not accepted for the selected demographic variables of the patients with chronic illness and their caregivers in the experimental group.

The association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies showed statistical significance with age and gender of the caregivers. This indicates that there was

significant improvement in the level of skill regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in the experimental group aged between 31 to 40 years those who were females in comparison to the other variables in the experimental group.

Hence the **NH_5** stated earlier, that "**There is no significant association of selected demographic variables with the mean differed skill score regarding pre hospital management of cardiac emergencies among care givers of patients with chronic illness in experimental group**" was not accepted for the selected demographic variables of care givers of patients with chronic illness in comparison to other variables in experimental group.

6.2 CONCLUSION

"**Be a life saver in preserving the golden hour of cardiac emergency**"

Cardiac emergencies are life threatening disorders that must be recognized immediately and the Smart and Wise use of Emergency Preparedness Protocol helps in saving the precious life of the patients with chronic illness by addressing the cardiac emergencies promptly will aid in improving their quality of life.

The present study assessed the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers. The investigator concluded that the lecture cum discussion using power point, preparation of cardiac emergency kit, demonstration and re demonstration of Blood pressure monitoring steps on the patients and Adult BLS techniques on a mannequin by the caregivers of patients with chronic illness on Emergency Preparedness Protocol is the effective method to improve the knowledge and skill regarding pre hospital management of cardiac emergencies.

6.3 IMPLICATIONS

The investigator had drawn the following implications from this study which is the vital concern to the field of Nursing Education, Nursing Practice, Nursing Administration and Nursing Research.

Nursing Education

- Nursing education is the foundation on which the nursing practice is built. Sound knowledge creates and ensures delivery of sound practice. Understanding knowledge use in everyday nursing practice is important to the improvement of educational preparation and quality in health care. Hence, Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies will help the patients with chronic illness and their care to save the life of the victims in the emergency situations.
- Pre hospital management of cardiac emergencies should be incorporated in nursing education curriculum and evidence based guidelines should be integrated to save the lives as well as render effective and quality health care to patients.
- Education on Emergency Preparedness Protocol helps the nurses to educate needy people with the improvement in knowledge and skill which creates confidence and positive impact to save the lives of people in their communities.

Nursing Practice

- Nurses play a dynamic and crucial role in health care. Nurses are an integral part of the comprehensive standards of care and health promotion.
- Nurses plan an important role in promoting public health by creating awareness on expected cardiac emergencies among chronic illness patients and ways to identify and manage the emergency situations in and out of hospital set up.
- Clinical nurses should take the responsibility to plan the teaching programme and mass health education and skill training programme on Basic life support techniques for the public especially focusing on pre hospital management of cardiac emergencies.

Nursing Administration

- The nurse administrator along with the governing bodies and other health care agencies can formulate a mass awareness teaching program and health policy to focus on identifying the risk factors, assessment techniques, basic life supports training, Emergency Preparedness Protocol on pre hospital management of cardiac emergencies.

- The present study enhanced the knowledge and skill of the patient with chronic illness and their care givers by education, demonstration and return demonstration skill techniques on Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies will help to save the lives of the patients.

Nursing Research

- Nursing research is a powerful means of answering questions about health care interventions and finding a better ways of promoting health, prevention of emergency situation and providing pre hospital management services to people of all ages and in different settings.
- The findings of the study can be disseminated to nurse practitioners and community health nurses and general public through various medias like internet, journals, literature, etc.,
- The findings of the study will help the professional nurses, patients with chronic illness and their care givers to gain knowledge on Emergency Preparedness Protocol on pre hospital management of cardiac emergencies will help to save the lives of the patients.
- Evidence based guidelines should be integrated into nursing practice to render effective and quality care to the patients.
- Nursing researchers can be motivated to conduct further study on different aspects from this topic. Emergency Preparedness Protocol on pre hospital management of cardiac emergencies is an effective and efficient means of managing cardiac emergencies which occurs at home helps to reduce further morbidity and mortality.

6.4 RECOMMENDATIONS

1. Recommending Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies to be incorporated in discharge planning for the patients with chronic illness.
2. Emergency Preparedness Protocol can be implemented into nursing practice in various clinical settings.

3. Emergency Preparedness Protocol can be devised as poster or issued as pamphlet to patients attending NCD clinic / chronic OPD who are at risk of cardiac emergencies in clinical settings.
4. Emergency Preparedness Protocol can be included in mass health education programmes in community settings.
5. A similar study can be conducted in large samples for better generalization.
6. A similar study can be conducted in various settings like industries, communities, schools, colleges.
7. Researcher recommending the implementation of Emergency Preparedness Protocol into nursing practise.

6.5 LIMITATIONS

1. Researcher experienced the difficulty to gather the patients with chronic illness in a group of 5 to 6 members for data collection.
2. Researcher experienced difficulty in obtaining setting permissions in government hospitals.
3. Researcher found difficulty in collecting reviews regarding management of cardiac emergencies at home.

6.6 PLAN FOR RESEARCH DISSEMINATION

1. The research findings will be disseminated through paper presentation and published in journals like journal of cardiology, journal of cardiological medicine, critical care and pre hospital emergency care journals and other national and international journals.

6.7 PLAN FOR RESEARCH UTILIZATION

1. The research findings will be utilized by implementing Emergency Preparedness Protocol in various clinical and community settings.

REFERENCES

1. Constitution of WHO: principles. World Health Organization. 2018 Available from: http:// www.who.int/about/mission/en/
2. Human Heart: Anatomy, Function & Facts [Internet]. Live Science. 2018 Available from: https://www.livescience.com/34655-human-heart.html
3. WHO | 10 facts on Non communicable diseases.Who.int. 2013. Available from: http:// www.who.int/features/factfiles/noncommunicable_diseases/en/
4. Non-communicable diseases cause 61% of deaths in India: WHO report - Times of India. 2018. Available from: https://timesofindia.indiatimes.com/life-style/health-fitness/health-news/non-communicable-diseases-cause-61-of-deaths-in-india-who report/ article show / 60761288.cms
5. NCD mortality and morbidity. World Health Organization. 2018 Available from: http://www.who.int/gho/ncd/mortality_morbidity/en/
6. Cleveland Clinic: Cardiovascular Emergencies - Virtual Medical School. 2018. Available from: https://teachmemedicine.org/ Cleveland- clinic- cardiovascular-emergencies/
7. The top 10 causes of death. World Health Organization. 2018. Available from: http://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death
8. Heart Disease Fact Sheet| Data & Statistics|DHDSP|CDC [Internet]. Cdc.gov. 2018 Available from: https://www.cdc.gov/dhdsp/data statistics/ fact_sheets/ fs_heart_ disease . html
9. American Heart Association statistical report tracks global figures for first time - News on Heart.org. News on Heart.org. 2018. Available from: https://news. heart.org/american-heart-association-statistical-report-tracks-global-figures-first-time/
10. Key CPR Facts and Stats 2018. CPR Certification Online HQ. 2018.Available from: https://www.cprcertificationonlinehq.com/cpr-facts-stats/
11. AHA Cardiac Arrest Statistics [Internet]. Cpr.heart.org. 2018 Available from: https://cpr. heart. org/AHAECC/CPR and ECC/ Resuscitation Science /UCM_ 477263_AHA-Cardiac - Arrest-Statistics.jsp%5BR=301,L,NC%5D
12. Prabhakaran D, Jeemon P, Roy A. Cardiovascular Diseases in India. Circulation. 2016; 133(16):1605-1620.

13. Top ten causes of Death in India - A Joint report of the Register General of India and Centre for Global Health Research, 2015 Cghr.org. 2018 Available from: http://www.cghr.org/wordpress/wp-content/uploads/COD-India-Report-2010-2013-Dec-19-2015.pdf
14. Sheth K. The Leading Causes of Death in India. World Atlas, 2018. Available from:https://www.worldatlas.com/articles/the-leading-causes-of-death-in-india.html
15. Sridevi's death: Here are few facts about sudden cardiac arrest Deccan Chronicle. 2018. Available from: https://www.deccanchronicle.com/lifestyle/health-and-well being/260218/sridevi-death-here-are-few-facts-about-sudden-cardiac-arrestyou. html
16. AHA Releases Latest Statistics on Sudden Cardiac Arrest | Sudden Cardiac Arrest Foundation.Sca-aware.org. 2018. Available from: http://www.sca-aware.org/sca-news/aha-releases-latest-statistics-on-sudden-cardiac-arrest
17. Report on Medical Certificate of Cause of Death, 2015.Thehinducentre.com. 2018. Available from: https://www.thehinducentre.com/multimedia/archive/ 03191/ MCCD_ Report-2015_c_3191919a.pdf
18. 'Mortality rate due to heart diseases highest in T.N. 'The Hindu. 2018. Available from: https://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/mortality-rate-due-to-heart-diseases-highest-in-tn/article4480645.ece
19. NCDs account for 73 per cent of disease burden in Tamil Nadu: Study Deccan Chronicle. 2018. Available from: https://www.deccanchronicle.com/lifestyle/ health-and-wellbeing/ 231217/ncds-account-for-73-per-cent-of-disease-burden-in-tamil-nadu-study. html
20. ICMR-INDIAB study provides new figures for diabetes. The Hindu. 2018 Available from: https://www.thehindu.com/news/national/icmrindiab-study-provides-new-figures-for-diabetes/article2497931.ece
21. Philip C. Chennai: Heart attacks caused 54% deaths last year - Times of India.2018. Available from: https://timesofindia.indiatimes.com/city/chennai/ Chennai-Heart-attacks-caused-54-deaths-last-year/articleshow/50555140.cms
22. Malik R. India is the diabetes capital of the world! - Times of India. 2018.Available from: https://timesofindia.indiatimes.com/life-style/health-fitness/health-news/ India-is-the-diabetes-capital-of-the-world/articleshow/50753461.cms

23. World Diabetes Day 2017: Number of Diabetics to Double In India by 2023 NDTV.com. 2018. Available from: https://www.ndtv.com/food/world-diabetes-day-2017-number-of-diabetics-to-double-in-india-by-2023-1775180
24. Heart Disease and Stroke Statistics 2017 - At a Glance. Healthmetrics.heart.org. 2018 Available from: https://healthmetrics.heart.org/wp-content/uploads/2017/06/Heart-Disease-and-Stroke-Statistics-2017-ucm_491265.pdf
25. Singh J. Hypertension, dyslipidemia on the rise among Indians: ICMR study https://www.livemint.com/.2018. Available from: https://www.livemint.com/Politics/bcYBmBWH5EVtoXOKBx5mEO/More-than-30-of-Indians-in-urban-areas-are-hypertense-ICMR.html
26. World health day, 2013. Who.int. 2018. Available from: http://www.who.int /campaigns/ world - health-day/2013/campaign_essentials.pdf
27. Sinha K. Less than 1% Indians know cardiopulmonary resuscitation - Times of India 2018. Available from: https://timesofindia.indiatimes.com/home/science /Less-than-1-Indians-know-cardiopulmonary-resuscitation/articleshow/12829621.cms
28. Less than 2% cardiac arrest patients in India receive CPR | Medi Bulletin. 2018. Available from: https://medibulletin.com/2018/04/01/moolchand-study-shows-less-than-2-cardiac-arrest-patients-receive-cpr/
29. More than 50% of heart attack cases reach hospital late | daily sun. 2018. Available from: http://www.daily-sun.com/post/211434
30. Kidney Disease Overview & Education – DaVita. com. 2018. Available from: https://www.davita.com/kidney-disease/.../symptoms.../chronic-kidney-disease.
31. Go AS., et al., Heart Disease and Stroke Statistics – 2013 Update. Circulation Journals. 2013; 22(1).
32. India will soon become the heart disease capital of the world .India.com. 2018 Available from: http://www.india.com/photos/health/here-are-6-shocking-facts-you-should-know-about-heart-disease-in-india-84176/india-will-soon-become-the-heart-disease-capital-of-the-world-84178/
33. Chauhan S, Aeri B T. Prevalence of Cardiovascular Disease in India and Its Economic Impact – A Review. International journal of scientific and research publications (IJSRP). 2013 Oct; 3(10); 1-5.

34. Gupta R, Mohan I, Narula J. Trends in Coronary Heart Disease Epidemiology in India. Annals of Global Health. 2016;82 (2):307-315.
35. Hailemarium T. Prevalence of Cardiovascular Emergencies in Specialized Hospital, Addis Ababa Ethiopia. Emergency Medicine: Open Access. 2014; 04(04).
36. Koike S, Ogawa T, Tanabe S, Matsumoto S, Akahane M, Yasunaga H et al. Collapse-to-emergency medical service cardiopulmonary resuscitation interval and outcomes of out-of-hospital cardiopulmonary arrest: a nationwide observational study. Critical Care. 2011; 15(3):R120.
37. Hara M, Hayashi K, Hikoso S, Sakata Y, Kitamura T. Different Impacts of Time From Collapse to First Cardiopulmonary Resuscitation on Outcomes After Witnessed Out-of-Hospital Cardiac Arrest in Adults. Circulation: Cardiovascular Quality and Outcomes. 2015; 8(3):277-284.
38. Sajithkumar.P. Dr.Ratna Prakash. Bystander CPR During Out – of – Hospital Cardiac Arrest among Patients brought to Emergency Department. IOSR Journal of Nursing and Health Sciences. 2016; 4(3): 43 – 45.
39. Krishna C. Out of hospital cardiac arrest resuscitation outcome in North India - CARO study. World Journal of Emergency Medicine. 2017; 8(3):200.
40. Srivatsa U, Swaminathan K, Sithy Athiya Munavarah K, Amsterdam E, Shantaraman K. Sudden cardiac death in South India: Incidence, risk factors and pathology. Indian Pacing and Electrophysiology Journal. 2016; 16(4):121-125.
41. Ramana Rao G, Rajanarsing Rao H, Reddy G, Prasad M. Epidemiological study on cardiac emergencies in Indian states having GVK Emergency Management and Research Institute services. Journal of Social Health and Diabetes. 2016; 4(2):121.
42. Johnson B, Webber P. An Introduction to Theory and Reasoning in Nursing. Philadelphia: Wolters Kluwer; 2015.
43. Khalequzzaman M, Chiang C, Choudhury S, Yatsuya H, Al-Mamun M, Al-Shoaibi A et al. Prevalence of non-communicable disease risk factors among poor shantytown residents in Dhaka, Bangladesh: a community-based cross-sectional survey. BMJ Open. 2017; 7(11):e014710.
44. Naseem S, Khattak U, Ghazanfar H, Irfan A. Prevalence of non-communicable diseases and their risk factors at a semi-urban community, Pakistan. Pan African Medical Journal. 2016; 23.

45. Aryal K, Mehata S, Neupane S, Vaidya A, Dhimal M, Dhakal P et al. The Burden and Determinants of Non Communicable Diseases Risk Factors in Nepal: Findings from a Nationwide STEPS Survey. PLOS ONE. 2015;10(8):e0134834.
46. Bhagyalaxmi A, Atul T, Shikha J. Prevalence of Risk Factors of Non-communicable Diseases in a District of Gujarat, India. Journal of Health, Population and Nutrition. 2013; 31(1).
47. Collins D, Jobanputra K, Frost T, Muhammed S, Ward A, Shafei A et al. Cardiovascular disease risk and prevention amongst Syrian refugees: mixed methods study of Médecins Sans Frontières programme in Jordan. Conflict and Health. 2017; 11(1).
48. Cetorelli V, Burnham G, Shabila N. Prevalence of non-communicable diseases and access to health care and medications among Yazidis and other minority groups displaced by ISIS into the Kurdistan Region of Iraq. Conflict and Health. 2017;11(1).
49. Hasan S, Khan H, Chowdhury A, Sabah K, Ekram M. Prevalence and Pattern of Cardiac Emergencies in a Tertiary Care Hospital of Bangladesh. Bangladesh Critical Care Journal. 2013; 1(1).
50. Hawkes C, Booth S, Ji C, Brace-McDonnell S, Whittington A, Mapstone J et al. Epidemiology and outcomes from out-of-hospital cardiac arrests in England. Resuscitation. 2017; 110: 133-140.
51. Mawani M, Kadir M, Azam I, Mehmood A, McNally B, Stevens K et al. Epidemiology and outcomes of out-of-hospital cardiac arrest in a developing country-a multicenter cohort study. BMC Emergency Medicine. 2016; 16(1).
52. Kitamura T, Kiyohara K, Sakai T, Iwami T, Nishiyama C, Kajino K et al. Epidemiology and outcome of adult out-of-hospital cardiac arrest of non-cardiac origin in Osaka: a population-based study. BMJ Open. 2014; 4(12):e006462.
53. Guiga H, Decroux C, Michelet P, Loundou A, Cornand D, Silhol F et al. Hospital and out-of-hospital mortality in 670 hypertensive emergencies and urgencies. The Journal of Clinical Hypertension. 2017; 19(11):1137-1142.
54. Janke A, McNaughton C, Brody A, Welch R, Levy P. Trends in the Incidence of Hypertensive Emergencies in US Emergency Departments From 2006 to 2013. Journal of the American Heart Association. 2016;5(12):1 - 8.

55. Piyanuttapull S. Prevalence of Hypertensive Emergency in Emergency Room of Rajavithi Hospital. Journal of Hypertension and Management. 2016; 2(1).
56. Dhadke S V, Dhadke V N, Batra D S. Clinical Profile of Hypertensive Emergencies in Intensive Care Unit, The Journal of The Association Of Physicians Of India. 2017; 65(5): 18 – 22.
57. Henry K, Murphy A, Willis D, Cusack S, Bury G, O'Sullivan I et al. Out-of-hospital cardiac arrest in Cork, Ireland. Emergency Medicine Journal. 2012; 30(6):496-500.
58. Goh E, Liang B, Fook – Chong S, Shahidah N, et al. Effect of Location of Out of Hospital Cardiac Arrest on Survival Outcomes. Annals of the academy of medicine, Singapore. 2013 Sep; 42(9): 437 – 444.
59. Wechkunanukul K, Grantham H, Clark R. Global review of delay time in seeking medical care for chest pain: An integrative literature review. Australian Critical Care. 2017; 30(1):13-20.
60. Al Nemer K, Al Qumaizi K I, Alnemer A, et al. Ambulance Response Time to Cardiac Emergencies in Riyadh. Imam Journal of Applied Sciences. 2016; 1(1): 33 – 38.
61. Ghazawy E, Seedhom A, Mahfouz E. Predictors of Delay in Seeking Health Care among Myocardial Infarction Patients, Minia District, Egypt. Advances in Preventive Medicine. 2015; 2015: 1-6.
62. Rivero F, Bastante T, Cuesta J, Benedicto A, Salamanca J, Restrepo J et al. Factors Associated With Delays in Seeking Medical Attention in Patients With ST-segment Elevation Acute Coronary Syndrome. Revista Española de Cardiología (English Edition). 2016; 69 (3):279-285.
63. Fathi M, Rahiminiya A, Zare M, Tavakoli N. Risk factors of delayed pre-hospital treatment seeking in patients with acute coronary syndrome: A prospective study. Turkish Journal of Emergency Medicine. 2015; 15 (4):163-167.
64. Zhu Q, Tan C, Tan H, Wong R, Joshi C, Cuttilan R et al. Orthostatic hypotension: prevalence and associated risk factors among the ambulatory elderly in an Asian population. Singapore Medical Journal. 2016; 57 (8):444-451.
65. Freud T, Punchik B, Press Y. Orthostatic Hypotension and Mortality in Elderly Frail Patients. Medicine. 2015; 94(24):e977.

66. Veronese N, De Rui M, Bolzetta F, Zambon S, Corti M, Baggio G et al. Orthostatic Changes in Blood Pressure and Mortality in the Elderly: The Pro.V.A Study. American Journal of Hypertension. 2015; 28 (10):1248-1256.
67. Zhou Y, Ke S, Qiu X, Liu L. Prevalence, risk factors, and prognosis of orthostatic hypotension in diabetic patients. Medicine. 2017; 96(36):e8004.
68. Omosola A,Arabi A, Al Swaidi J, Singh R, Asaad N. Risk of Diabetes Mellitus on Incidence of Out of Hospital Cardiac Arrest and Trends of Outcome : A 22 Year Observational Study from the Middle East. 2018 March; 71 (11): A455.
69. Ro Y, Shin S, Song K, Kim J, Lee E, Lee Y et al. Risk of Diabetes Mellitus on Incidence of Out-of-Hospital Cardiac Arrests: A Case-Control Study. PLOS ONE. 2016; 11 (4): e0154245.
70. Viereck S, Palsgaard Møller T, Kjær Ersbøll A, Folke F, Lippert F. Effect of bystander CPR initiation prior to the emergency call on ROSC and 30day survival—An evaluation of 548 emergency calls. Resuscitation. 2017; 111: 55-61.
71. Geri G, Fahrenbruch C, Meischke H, Painter I, White L, Rea T et al. Effects of bystander CPR following out-of-hospital cardiac arrest on hospital costs and long-term survival. Resuscitation. 2017; 115: 129-134.
72. Hasselqvist-Ax I, Riva G, Herlitz J, Rosenqvist M, Hollenberg J, Nordberg P et al. Early Cardiopulmonary Resuscitation in Out-of-Hospital Cardiac Arrest. New England Journal of Medicine. 2015; 372(24):2307-2315.
73. Nehme Z, Andrew E, Bernard S, Smith K. Impact of cardiopulmonary resuscitation duration on survival from paramedic witnessed out-of-hospital cardiac arrests: An observational study. Resuscitation. 2016; 100:25-31.
74. Morais D, Carvalho D, Correa A. Out-of-hospital Cardiac Arrest: Determinant Factors for Immediate Survival after Cardio Pulmonary Resuscitation. Revista Latino Americana De Enfermagem (Scielo). 2014 Jul - Aug; 22(4) : 562 – 568.
75. Pandian G, Thampi S, Chakraborty N, Kattula D, Kundavaram P. Profile and outcome of sudden cardiac arrests in the emergency department of a tertiary care hospital in South India. Journal of Emergencies, Trauma, and Shock. 2016; 9(4):139.
76. De Lima Pereira A, Narayan G, Murty S. Survival after cardiopulmonary resuscitation and factors influencing it in the emergency department of a tertiary

care hospital in bangalore, india. Journal of Evolution of Medical and Dental Sciences. 2016;5(03):173-176.

77. Graham K, Strauss C, Boland L, Mooney M, Harris K, Unger B et al. Has the Time Come for a National Cardiovascular Emergency Care System?. Circulation. 2012; 125(16):2035-2044.
78. Wu Z, Panczyk M, Spaite D, Hu C, Fukushima H, Langlais B et al. Telephone cardiopulmonary resuscitation is independently associated with improved survival and improved functional outcome after out-of-hospital cardiac arrest. Resuscitation. 2018; 122: 135-140.
79. Bobrow B, Spaite D, Vadeboncoeur T, Hu C, Mullins T, Tormala W et al. Implementation of a Regional Telephone Cardiopulmonary Resuscitation Program and Outcomes After Out-of-Hospital Cardiac Arrest. JAMA Cardiology. 2016; 1(3):294.
80. Mathiesen W, Bjørshol C, Braut G, Søreide E. Reactions and Coping Strategies in Lay Rescuers who have provided CPR to Out-Of-Hospital Cardiac Arrest Victims: A Qualitative Study. BMJ Open Journal. 2016; 6(5): e010671.
81. Roth G, Gillespie C, Mokdad A, Shen D, Fleming D, Stergachis A et al. Aspirin use and knowledge in the community: a population- and health facility based survey for measuring local health system performance. BMC Cardiovascular Disorders. 2014; 14(1).
82. Tchwenko S, Fleming E, Perry G, aspirin use for the primary prevention of myocardial infarction among men in north Carolina. National centre for chronic disease prevention and health promotion (US). 2015 Nov; 19(12).
83. Khosravan S, Alami A, Hamzei A, Borna J. Comparing the Effectiveness of Airway Management Devices in Pre-Hospital Emergency Care: a Randomized Clinical Trial. Pakistan Journal of Medical Sciences. 1969; 31(4)
84. Patel A, Mohanan P, Prabhakaran D, Huffman M. Pre-hospital acute coronary syndrome care in Kerala, India: A qualitative analysis. Indian Heart Journal. 2017; 69(1):93-100.
85. Patel A, Prabhakaran D, Berendsen M, Mohanan P, Huffman M. Pre-hospital policies for the care of patients with acute coronary syndromes in India: A policy document analysis. Indian Heart Journal. 2017; 69:S12-S19.

86. Savino P, Sporer K, Barger J, Brown J, Gilbert G, Koenig K et al. Chest Pain of Suspected Cardiac Origin: Current Evidence-based Recommendations for Prehospital Care. Western Journal of Emergency Medicine. 2015;16(7):983-995.
87. Seidlerová J, Filipovský J, Wohlfahrt P, Mayer O, Cífková R. Availability and use of home blood pressure measurement in the Czech general population. Cor et Vasa. 2014; 56(2):e158-e163.
88. Margolis K, Asche S, Bergdall A, Dehmer S, Groen S, Kadrmas H et al. Effect of Home Blood Pressure Telemonitoring and Pharmacist Management on Blood Pressure Control. JAMA. 2013; 310(1):46.
89. Lam J, Guirguis L. Patients´ blood pressure knowledge, perceptions and monitoring practices in community pharmacies. Pharmacy Practice (Internet). 2010; 8(3).
90. Brokmann J, Rossaint R, Müller M, Fitzner C, Villa L, Beckers S et al. Blood pressure management and guideline adherence in hypertensive emergencies and urgencies: A comparison between telemedically supported and conventional out-of-hospital care. The Journal of Clinical Hypertension. 2017; 19(7):704-712.
91. Hatem Al Khayyal, Moshera El Geneidy, Somaya Abdel Moneim El Shazly. Elders' Knowledge about Risk Factors of Coronary Heart Disease, Their Perceived Risk, and Adopted Preventive Behaviors. Journal of Education And Practice. 2016; 7(10); 89 – 98.
92. Khan N S, Shehnaz S I, Guruswami G K, Ibrahim S A M, Jabbar M. Knowledge of Warning Signs , Presenting Symptoms and Risk Factors of Coronary Heart Disease among the Population of Dubai and Northern Emirates in UAE: A Cross Sectional Study. Nepal Journal of Epidemiology. 2017 Jun; 7(2): 670 – 680.
93. Hardeland C, Skåre C, Kramer-Johansen J, Birkenes T, Myklebust H, Hansen A et al. Targeted simulation and education to improve cardiac arrest recognition and telephone assisted CPR in an emergency medical communication centre. Resuscitation. 2017; 114:21-26.
94. Kim H, Kim H, Suh E. The Effect of Patient-centered CPR Education for Family Caregivers of Patients with Cardiovascular Diseases. Journal of Korean Academy of Nursing. 2016; 46(3):463.
95. Eldesouky.E L, Gaballah. S H, Rania Al Sabi, Abdelhadi L M S. Effect of A Training Program for Caregivers of Cardiac Patients on their Knowledge and

Practice about Cardio Pulmonary Resuscitation to prevent Sudden Death from Cardiac Arrest. World Journal of Nursing Sciences. 2015; 1(3) : 45 – 53.

96. Varalakshmi. E. Assess the Effectiveness of Training Module on Knowledge and Skill in Basic Life Support (BLS) among Caregivers of Clients. International Journal of Pharma and Bio Sciences. 2016; 7(4); (B): 574 – 578.
97. Sule Ozbilgin, Mert Akan, Volkan Hanci, Ceren Aygun, Bahar Kuvaki. Evaluation of Public Awareness, Knowledge, Attitudes about Cardio Pulmonary Resuscitation: Report of Izmir. Turkish Journal of Anesthesiology and Reanimation. 2015 Dec; 43(6): 396 – 405.
98. Chair S, Hung M, Lui J, Lee D, Shiu I, Choi K. Public knowledge and attitudes towards cardiopulmonary resuscitation in Hong Kong: a telephone survey. Hong Kong Medical Journal. 2014; 20(2):126 – 133.
99. Rajapakse R, Noč M, Kersnik J. Public knowledge of cardiopulmonary resuscitation in Republic of Slovenia. Wiener klinische Wochenschrift. 2010; 122(23-24):667-672.
100. Urban J, Thode H, Stapleton E, Singer A. Current knowledge of and willingness to perform Hands-Only CPR in laypersons. Resuscitation. 2013 Nov; 84(11): 1574 – 1578.
101. Blewer A, Putt M, Becker L, Riegel B, Li J, Leary M et al. Video-Only Cardiopulmonary Resuscitation Education for High-Risk Families Before Hospital Discharge. Circulation: Cardiovascular Quality and Outcomes. 2016; 9(6):740-748.
102. Albarqouni L, Smenes K, Meinertz T, Schunkert H, Fang X, Ronel J et al. Patients' knowledge about symptoms and adequate behaviour during acute myocardial infarction and its impact on delay time. Patient Education and Counseling. 2016; 99(11):1845-1851.
103. Henriksson C, Larsson M, Arnetz J, Herlitz J, Karlsson J, Svensson L et al. Knowledge about Acute Myocardial Infarction (AMI) and attitudes to medical care seeking—A comparison between patients and the general public. 2018.
104. Pradeep L P. Effectiveness of Planned Teaching on Early Signs and Symptoms and Immediate Treatment of Myocardial Infarction among Patients. International Journal of Science and Research. 2014 June; 3(6): 712 – 718.
105. Deaver U J, Kanika, Hennah Crystal, Pooja Jaswal. The Effectiveness of Planned Teaching Programme for Self Blood Pressure Monitoring in terms of Knowledge

and Skill among Hypertensive Clients of Rural Community of North India. International Journal of Applied Research. 2017; 3(5) : 384 – 386.

106. Saad S , Waqar Z, Islam F, Iqbal H, Nomani A Z. The Awareness of Stroke in Caregivers of Stroke Patients in Pakistan. Journal of Neurological Disorders. 2017; 5: 359.
107. Jasmine Pinto V, George P. Awareness on Risk Factors and Warning Signs of Stroke among Individuals with Hypertension. Journal of Evolution of Medical and Dental Sciences. 2017; 6(30):2410-2414.
108. Infant A, Hemamalini M. Assessment of Level of Caregiver Burden among Caregivers of Elderly in Selected Village, Kancheepuram District. Community and Public Health Nursing. 2016; 1 (2):105-109.
109. Sapna, Bhatia R, Sharma G, Gopichandran L. A Comparative Study to Assess the Knowledge on Risk Factors, Warning Signs and Immediate Treatment of Stroke among Stroke Survivors and Patients of Cardiovascular Disorders who are at risk of Stroke. Asian Journal of Nursing Education and Research. 2016; 6(3):391.
110. Polit. F. Denise, Beck Tatano Cheryl. Nursing Research- Generating and assessing Evidence for Nursing practice, Ninth Edition, South Asian Edition, New Delhi, Woters Kluwer (India) publication. 2012.
111. Lewis S.L., Dirksen S.R., Heithkemper M.M., Bucher L., & Harding M.M., Medical – Surgical Nursing : Assessment and Management of clinical Problems. St.Louis: Elsevier.9th edition.2015.

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INTERNATIONAL CENTRE FOR COLLABORATIVE RESEARCH

OMAYAL ACHI COLLEGE OF NURSING

Run by MR Omayal Achi MR Arunachalam Trust

ETHICAL CLEARANCE CERTIFICATE

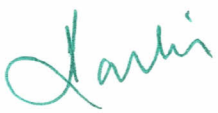
Valid from : July 2016
Valid to : July 2018 (2 Years)

Name of the Principle Investigator: Ms. M.Karthika, M.Sc.(N) Student (Medical Surgical Nursing)

The **ICCR** Ethical Committee had reviewed the project titled **"Effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers, at selected hospitals, Chennai".** The proposal was found to be acceptable on ethical grounds. The Principle Investigator has the responsibility and accountability for any other administrative / regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review.

This certificate of approval is valid for the time period provided, there is no change in the methodology protocol or consent process and documents.

Any significant change should be reported to Director for Research Committee considerations in advance for its implementation.

Signature of Research Director : 

Signature of Researcher : M. karthika.

45, AMBATTUR ROAD, PUZHAL, CHENNAI - 600 066. TAMILNADU, INDIA
Tel : 26591617, 26591618, Fax : 26591616, Email : iccrphc@gmail.com, website : www.omayaln.com
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1992 - 2017
Approved by Govt. of Tamilnadu, Indian Nursing Council, New Delhi & Tamilnadu Nurses and Midwives Council, Chennai.
Affiliated to theTamilnadu Dr. M.G.R. Medical University, Guindy, Chennai

21.11.2017

The Medical Director,
ESI Medical Hospital
Ayanavaram,
Chennai-600 023.

Sir/Madam,

Sub: Request for permission to conduct main study – reg.

Mrs. M Karthika, is a bonafide M.Sc (Nursing) I year student studying at our College and she is conducting a main study on "A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF EMERGENCY PREPAREDNESS PROTOCOL ON KNOWLEDGE AND SKILL REGARDING PREHOSPITAL MANAGEMENT ON CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS AT ASELECTED SETTINGS, CHENNAI".

This is for her research project to be submitted to the Tamilnadu Dr.M.G.R. Medical University in partial fulfillment of the University requirement for the award of M.Sc (Nursing) Degree.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide by the rules and regulations of the Hospital. The information collected from your Hospital will be kept confidential.

I kindly request you to grant her permission to conduct the study at your Esteemed Hospital.

Thanking you,

Yours Sincerely,

OMAYAL ACHI COLLEGE OF NURSING
Principal

CC to :

1. The Regional Medical Officer
2. The Nursing Superintendant

Completed Research Study (Above mentioned) from 2nd Jan 18 To 16th Jan 2018.

SUPERINTENDENT
E. S. I. HOSPITAL
AYANAVARAM
CHENNAI-600 023

No.45, Ambattur Road, Puzhal. Chennai - 600 066. Ph: 26591617, 26591618, Fax : 26591616
Email : oacn1992@gmail.com web : www.omayaln.com

The Chief Medical Officer,
Government Periyar Nagar,
Peripheral Hospital,
Chennai 600082.

06.12.2017

Sir/Madam,

Sub: Request for permission to conduct main study – reg.

Mrs. M Karthika, is a bonafide M.Sc (Nursing) I year student studying at our College and she is conducting a main study on "A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF EMERGENCY PREPAREDNESS PROTOCOL ON KNOWLEDGE AND SKILL REGARDING PREHOSPITAL MANAGEMENT ON CARDIAC EMERGENCIES AMONG PATIENTS WITH CHRONIC ILLNESS AND THEIR CAREGIVERS AT ASELECTED SETTINGS, CHENNAI".

This is for her research project to be submitted to the Tamilnadu Dr.M.G.R. Medical University in partial fulfillment of the University requirement for the award of M.Sc (Nursing) Degree.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide by the rules and regulations of the Hospital. The information collected from your Hospital will be kept confidential.

I kindly request you to grant her permission to conduct the study at your Esteemed Hospital.

Thanking you,

Yours Sincerely,

OMAYAL ACHI COLLEGE OF NURSING
Principal

CC to :

1. The Nursing Superintendant

Completed her study
17.1.18 to 31.1.18

15/1/18

Chief Civil Surgeon
Government Peripheral Hospital
Periyar Nagar, Chennai-82.

APPENDIX – C

LETTER SEEKING EXPERT'S OPINION FOR CONTENT VALIDITY

From,

Mrs. M. Karthika,

M.Sc Nursing I year,

Omayal Achi College of Nursing,

Chennai.

Sub: Requisition for expert opinion for content validity.

Respected Sir/Madam,

I am M. Karthika, doing my M.Sc Nursing I year specializing in Medical Surgical Nursing at Omayal Achi College of Nursing during October 2016 – 2018, under the guidance of Dr. S. Kanchana, Principal and Research Director, ICCR and Specialty Guide Mrs.Sasikala.S, Associate Professor, Medical Surgical Nursing department. As a part of my research project to be submitted to the Tamil Nadu Dr. M.G.R Medical University, Guindy, October 2018 session and in partial fulfillment of the University requirement for the award of M.Sc Nursing degree, I am conducting **"A Quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected hospitals, Chennai , 2018".**

I have enclosed my data collection and intervention tool for your expert guidance and validation. Kindly do the needful.

Thanking you,

Yours faithfully.

(M. KARTHIKA

Enclosures:

1. Research proposal
2. Data collection tool & Intervention tool
3. Content validity form
4. Certificate for content validity

LIST OF EXPERTS FOR CONTENT VALIDITY

MEDICAL EXPERTS:

1. **Dr. K. ANAND, MD DNB (Cardio)**
   Consultant Cardiologist,
   Frontier Life Line Hospital,
   Chennai – 600 101.

2. **Dr. ARULNITHI AYYANATHAN, MBBS, MRCP(UK), AB (US), MBA(US)**
   Consultant Cardiologist,
   Sir Ivan Stedeford Hospital,
   Ambattur,
   Chennai – 600 053.

NURSING EXPERTS:

3. **Mrs. SEETHA LAKSHMI RAVI, M.Sc. (N)**
   Reader,
   Medical Surgical Nursing Department,
   Sri Ramachandra College of Nursing,
   Porur,
   Chennai – 600 116.

4. **Mrs. SHOBHA, M.Sc. (N), Ph.D.,**
   HOD – Medical Surgical Nursing Department,
   MMM College of Nursing,
   No. 131, Sakthi Nagar,
   Nolambur,
   Chennai – 600 095.

5. **Mrs. M.KANIMOZHI, M.Sc. (N), Ph.D.,**
   Professor,
   Medical Surgical Nursing Department,
   Madha College of Nursing,
   Chennai – 600 069.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the Data collection and Intervention tool developed by Ms. M. Karthika, M.Sc (Nursing) II year student of Omayal Achi College of Nursing for her study **" A Quasi experimental study to assess the effectiveness of emergency preparedness protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected setting Chennai " 2017,** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Signature with date: 24/Nov/17

Seal : :

Dr. K. ANAND MD DNB(CARDIO)
CONSULTANT CARDIOLOGIST
FRONTIER LIFELINE HOSPITAL
CHENNAI - 600 101
TMC REG. NO : 63638

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the Data collection and Intervention tool developed by Ms. M. Karthika, M.Sc (Nursing) II year student of Omayal Achi College of Nursing for her study **" A Quasi experimental study to assess the effectiveness of emergency preparedness protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected setting Chennai " 2017,** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Signature with date: 23/11/17

Seal :

Dr.ARULNITHI AYYANATHAN
MBBS, MRCP(UK), AB(US), MBA(US)
Consultant Cardiologist

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the Data collection and Intervention tool developed by Ms. M. Karthika, M.Sc (Nursing) II year student of Omayal Achi College of Nursing for her study **" A Quasi experimental study to assess the effectiveness of emergency preparedness protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected setting Chennai " 2017,** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Signature with date: S Lakshmi Rao
T.A.Seetha Lakshmi
Readers,

Seal : :

SRI RAMACHANDRA COLLEGE OF NURSING
Sri Ramachandra University
Porur, Chennai-600 116.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the Data collection and Intervention tool developed by Ms. M. Karthika, M.Sc (Nursing) II year student of Omayal Achi College of Nursing for her study **" A Quasi experimental study to assess the effectiveness of emergency preparedness protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected setting Chennai " 2017,** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Signature with date: 24.11.17.

Seal : :

HOD-MEDICAL SURGICAL NURSING
MMM COLLEGE OF NURSING
No. 131, SAKTHI NAGAR,
NOLAMBUR, CHENNAI-600 095.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the Data collection and Intervention tool developed by Ms. M. Karthika, M.Sc (Nursing) II year student of Omayal Achi College of Nursing for her study " **A Quasi experimental study to assess the effectiveness of emergency preparedness protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected setting Chennai " 2017,** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Signature with date: 28/11/17

[M. KANIMOZHI, PROFESSOR]

Seal :

APPENDIX - E

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. M. Karthika.** M.Sc. Nursing II year student of Omayal Achi College of Nursing, Chennai, conducted a dissertation work on " **A Quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected hospitals, Chennai**", under the guidance of **Mrs.Sasikala.S, Associate Professor, Medical –Surgical Nursing department** as a partial fulfillment of The Tamil Nadu Dr. M.G.R Medical University requirement for the award of M.Sc Nursing degree is edited for English language appropriateness by

Signature with Date:

Seal :

Mrs. [illegible] M.L.I.S.,
Govt. [illegible] School
G.K.M. Colony, Chennai - 600 082.

APPENDIX F

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Ms. M. Karthika**, M Sc Nursing II year student of Dhayal Achi College of Nursing, Chennai, conducted a dissertation work on "**A Quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their care givers at selected hospitals, Chennai**" under the guidance of **Mrs.Sasikala.S, Associate Professor, Medical –Surgical Nursing department** as a partial fulfillment of The Tamil Nadu Dr. M.G.R Medical University requirement for the award of M Sc Nursing degree is edited for Tamil language appropriateness by ஜ. கோமதி .

Signature with Date: ஜ.கோமதி 20/12/2017

Seal :

G. GOMATHI, M.A., B.LIT.,
TAMIL PANDIT
GOVT. HR. SEC. SCHOOL
G.K.M. COLONY, CHENNAI-82

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IEC CERTIFICATE

Name of the Principle Investigator: Ms. M.KARTHIKA

The **IEC** committee meeting had reviewed the IEC materials – **PowerPoint Presentation and Booklet on "Emergency Preparedness Protocol regarding pre hospital management of cardiac emergencies".**

The proposal was found to be acceptable on principles of AV AID preparation. It is certified that the intervention tool based on IEC materials are appropriate to administer for the research project titled "**Effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers, at selected hospitals, Chennai**". This certificate of approval is valid for the time period provided.

Any significant change should be reported to coordinator / Director for research committee considerations in advance for its implementation.

Signature of the IEC Director : Lathi

Signature of the Researcher : M. Karthika.

Date : 02.01.2018

45, AMBATTUR ROAD, PUZHAL, CHENNAI - 600 066. TAMILNADU, INDIA
Tel : 26591617, 26591618, Fax : 26591616, Email : iccrphc@gmail.com, website : www.omayaln.com
Official Journal Website : www.iccrjnr.com

APPENDIX - H

INFORMED CONSENT REQUISITION FORM

Good Morning,

I Ms. KARTHIKA. M, M.Sc (Nursing) student from Omayal Achi College of Nursing Chennai conducting "**A quasi experimental study to assess the effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai",** as a partial fulfillment of M.Sc (Nursing) degree requirement under the Tamilnadu Dr. M.G.R. Medical University.

I assure you that information provided by you will be kept confidential. So, I request you to kindly co-operate with me and participate in this study by giving your open and honest response to the questions being asked.

Thanking you

Signature of the Investigator

Mrs.M.Karthika

INFORMED WRITTEN CONSENT FORM

I understand that I am being asked to participate in a research study conducted by Ms. KARTHIKA. M, M.Sc(Nursing) Student of Omayal Achi College of Nursing. This research study will assess the **effectiveness of Emergency Preparedness Protocol on knowledge and skill regarding pre hospital management of cardiac emergencies among patients with chronic illness and their caregivers at selected hospitals, Chennai**, If I agree to participate in the study, I will be given the intervention (A teaching with powerpoint and an information booklet).

I understand that there are no risks associated with this study. I understand that my knowledge and skill regarding pre hospital management of cardiac emergencies will be assessed. I realize that the knowledge gained from this study may help either me or other people in the future.The data will be kept confidential and it is used in the analysis process.

I realize that my participation in this study is entirely voluntary and I may withdraw from the study at any time. If I decide to discontinue in this study, I will be continue to be treated in the usual and customary fashion.

However this information may be used in nursing publication or presentations. If I need to, I can contact Ms.KARTHIKA. M, M.Sc (Nursing) II year student of Omayal Achi College of Nursing, No. 45, Ambattur Road, Puzhal, Chennai at any time during the study.

The study has been explained to me, I have read and understood this consent form, all of my questions have been answered, and I agree to participate in the study, I understand that I will be given a copy of this signed consent form.

Thumb print / Signature of Participants Date

Signature of Investigator Date

அறிவிக்கப்பட்ட ஒப்புதல் கோரிக்கை படிவம்

காலை வணக்கம்,

ம. கார்த்திகா ஆகிய நான் சென்னை புழலில் உள்ள உமையாள்_ஆச்சி செவிலியர் கல்லூரியில் முதுகலை செவிலியர் பட்டம் பயிலும் மாணவி. எனது படிப்பின் ஒரு பகுதியாக **"இதய அவசர நிலையை_மருத்துவமனைக்கு முன்னர் பராமரிப்பதில் நாள்பட்ட நோயால் பாதிக்கப்பட்ட நோயாளி மற்றும் அவருடைய காப்பாளர்களின் அறிவு மற்றும் திறமையை மேம்படுத்த அவசரகால தயார் நிலை நெறிமுறை** எந்த வகையில் பயனுள்ளது என்பது பற்றிய ஒரு அரை பரிசோதனை ஆய்வை மேற்கொள்கின்றேன்.

நீங்கள் அளிக்கும் விவரங்கள் பாதுகாப்பாக வைக்கப்படும் என்று உறுதி கூறுகிறேன். எனவே, இந்த ஆய்வில் நீங்கள் பங்கேற்று உங்களது வெளிப்படையான மற்றும் நேர்மையான பதில்களை நான் கேட்கும் கேள்விகளுக்கு அளித்து உதவுமாறு வேண்டிக் கேட்டுக்கொள்கின்றேன்.

நன்றி

ஆய்வாளரின்_கையொப்பம்

ம. கார்த்திகா

எழுத்து மூலம் அறிவிக்கப்பட்ட ஒப்புதல் படிவம்

நான் ம. கார்த்திகா சென்னை புழலில் உள்ள உமையாள் ஆச்சி செவிலியர் கல்லூரியில்_முதுகலை செவிலியர் பட்டம் பயிலும் மாணவி தனது படிப்பின் ஒரு பகுதியாக **"இதய அவசர நிலையை மருத்துவமனைக்கு_முன்னர் பராமரிப்பதில் நாள்பட்ட நோயால் பாதிக்கப்பட்ட நோயாளி மற்றும் அவருடைய காப்பாளர்களின் அறிவு மற்றும் திறமையை மேம்படுத்த அவசரகால தயார் நிலை நெறிமுறை"** எந்த வகையில் பயனுள்ளது என்பது பற்றிய ஒரு அரை பரிசோதனை ஆய்வை மேற்கொள்வதில் பங்குக்கொள்ள கேட்டுக்கொண்டதை நான் புரிந்து கொண்டேன். இந்த ஆய்வில் நான் பங்குக்கொண்டால் எனக்கு பவர்பாயிண்ட் மற்றும் குறும்புத்தகம் மூலம் படிப்பினை எனக்கு அளிக்கப்படும்.

இந்த ஆய்வில் எந்தவித ஆபத்தும் இல்லை என்று புரிந்து கொண்டேன். இதய அவசர நிலையை மருத்துவமனைக்கு முன்னர் பராமரிப்பதில் எனக்கு இருக்கும் அறிவுத்திறன் மற்றும் திறமையை மதிப்பிடப்படும் என்று புரிந்துக் கொண்டேன். இந்த ஆய்வின் மூலம் நான் பெறும் அறிவுத்திறன் எனக்கும், பிறருக்கும் எதிர்காலத்தில் உதவும் என்று உணர்கிறேன். என்னால் தரப்படும் விவரங்கள் பாதுகாப்பாகவும் ஆய்வின் பகுப்பாய்வு செயல்முறைக்கு பயன்படுத்தப்படும் என்று உணர்ந்துள்ளேன்.

இந்த ஆய்வில் நான் சுயமாக பங்கேற்கிறேன் என்று உணர்வதோடு இந்த ஆய்விலிருந்து எந்த நேரமும் நான் வெளியேறலாம் என்றும் உணர்ந்துள்ளேன். நான் இந்த ஆய்விலிருந்து வெளியேறினால் நான் வழக்கமான முறையில் நடத்தப்படுவேன்.

இந்த ஆய்வின் விவரங்கள் செவிலியர் பட்டம் பயிலும் பதிப்பகத்தில் பதிப்பிக்க பயனபடுத்தபடும். தேவைப்பட்டால் நான் ம.கார்த்திகா, செவிலியர் முதுகலை இரண்டாம் ஆண்டு, சென்னை புழலில் உள்ள உமையாள் ஆச்சி செவிலியர் கல்லூரியில் எந்த நேரமும் சென்று இந்த ஆய்வின் போது தொடர்பு கொள்ளலாம்.

இந்த ஆய்வை பற்றி எனக்கு நன்கு விளக்கப்பட்டுள்ளது. இந்த ஒப்புதல் படிவத்தை நான் நன்றாக படித்து புரிந்துகொண்டேன். நான் கேட்கும் எல்லா கேள்விகளுக்கும் எனக்கு பதிலளிக்கப்பட்டது. இதனால் நான் இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக்கொள்கின்றேன். இந்த ஒப்புதல் படிவத்தின் ஒரு நகல் எனக்கு அளிக்கப்படும் என்று புரிந்து கொண்டேன்.

பெருவிரல் அச்சு/பங்கேற்பாளரின் கையொப்பம் **தேதி**

ஆய்வாளரின் கையொப்பம் **தேதி**

APPENDIX – I

DATA COLLECTION TOOL

SECTION – A: DEMOGRAPHIC VARIABLES

Instructions: Tick the most suitable answer for each of the following question from the options given below.

Sample no……..

A) DEMOGRAPHIC VARIABLES OF PATIENTS

1. Age in years
   a) 40-50
   b) 51-60
   c) 61-70
   d) > 70

2. Gender
   a) Male
   b) Female

3. Religion
   a) Hindu
   b) Christian
   c) Muslim
   d) Others

4. Type of family
   a) Nuclear family
   b) Joint family
   c) Extended family
   d) Separated family
   e) Others

5. Dietary pattern
    a) Vegetarian
    b) Non - Vegetarian

6. Education
    a) Professionals or honors
    b) Graduate or post graduate
    c) Intermediate or post high school diploma
    d) High school certificate
    e) Middle school certificate
    f) Primary school certificate
    g) Non – literate
    h) Others

7. Occupation
    a) Professionals
    b) Semi professionals
    c) Clerical, Shop owner / Farmers
    d) Skilled
    e) Semi skilled or Unemployed
    f) Unskilled
    g) Others

8. Family monthly income in Rupees
    a) <5000
    b) 5001 to 15000
    c) 15001 to 25000
    d) >25000

9. History of Co-morbid illness

S. No	Disease	Years of Chronicity	Regular treatment or follow up	
			Yes	No
1.	Diabetes mellitus			
2.	Hypertension			
3.	Chronic kidney disease			

10. Dependency of the patient on caregivers
    a) Wholly dependent
    b) Partially dependent
    c) Independent

B) DEMOGRAPHIC VARIABLES OF CAREGIVERS

1. Age in years
    a) 21-30
    b) 31-40
    c) 41-50
    d) > 50

2. Gender
    a) Male
    b) Female

3. Degree of relationship with the patient
    a) First degree
    b) Second degree
    c) Others

4. Education
    a) Professionals or honors
    b) Graduate or post graduate
    c) Intermediate or post high school diploma
    d) High school certificate
    e) Middle school certificate
    f) Primary school certificate
    g) Non – literate
    h) others

5. Occupation
    a) Profession
    b) Semi profession
    c) Clerical, shop owner/farmers
    d) Skilled
    e) Semi skilled or Unemployed
    f) Unskilled
    g) Others

6. Duration of time spent with the patient per day
    a) 1-4 hours
    b) 5-8 hours
    c) 9-12 hours
    d) >12 hours

SECTION - B: STRUCTURED KNOWLEDGE QUESTIONNAIRE

Instructions: Tick the most suitable answer for each of the following question from the options given below.

GENERAL INFORMATION

1. Which organ supplies blood to the body?
    a. Lungs
    b. Liver
    c. Heart
    d. Brain

2. What is supplied by the heart to the whole body?
    a. Carbon dioxide
    b. Oxygen & nutrients
    c. Carbon monoxide
    d. Protein

3. What is mean by cardiac emergencies?
    a. Life threatening disorders of the brain
    b. Life threatening disorders of the lungs
    c. Life threatening disorders of the heart
    d. Life threatening disorders of the kidneys

4. Which are the conditions considered as cardiac emergency?
    a. Chronic kidney disease, heart disease, cirrhosis of liver
    b. Pulmonary edema, lung failure, hypertension
    c. Heart attack, sudden cardiac arrest, low/ high blood pressure.
    d. Asthma, hypotension, pulmonary edema

5. Which disease cause majority of deaths globally?
    a. Neurologic disorders
    b. Genito Urinary disorders
    c. Cardio vascular disease
    d. Intestinal disorders

6. What are the main causes of cardiac emergencies?
    a. Controlled blood sugar, controlled blood pressure, physical in activity
    b. Un Controlled blood sugar & blood pressure, emotional stress, heavy physical activity
    c. Regular follow up, physical in activity, family history
    d. Family history, regular follow up, regular medication

7. Which personal habits may aggravate the cardiac emergencies?
    a. Chronic betel chewing and smoking
    b. Chronic smoking & alcoholism
    c. Occasional smoking and alcoholism
    d. Betal chewing and alcoholism

8. What is hypertensive emergency?
    a. Sudden raise of BP more than180/120mm Hg
    b. BP less than180/120mm Hg
    c. BP = 120/80mm Hg
    d. BP less than120/80mm Hg

9. What is meant by sudden cardiac arrest?
    a. Lungs stop breathing suddenly
    b. Heart stops beating suddenly
    c. Brain suddenly stops working
    d. Sudden loss of body functioning.

10. What is mean by low blood pressure or hypotension?
    a. BP more than 120/80 mm Hg.
    b. BP falls less than 90/60 mm Hg
    c. BP = 120/80 mm Hg
    d. BP more than 100/60 mm Hg

SIGNS AND SYMPTOMS AND ASSESSMENT TECHNIQUES:

11. What is the cardinal sign of heart attack?
    a. Severe radiating chest pain, profuse sweating, shortness of breath
    b. Epigastric pain, nausea and vomiting
    c. Non radiating chest pain, nausea and vomiting
    d. Shortness of breath, epigastric pain, vomiting

12. What is the warning sign of sudden cardiac arrest?
    a. Sudden collapse with pulse, normal breathing
    b. Sudden collapse, no pulse, no breathing or gasping
    c. Conscious with pulse, no breathing
    d. Conscious with no pulse, normal breathing

13. What might be the cause if the patient is having fainting, cold clammy skin, dry mouth and visual disturbances?
    a. Hypertension
    b. Shock
    c. Hypotension
    d. Heart attack

14. What are the warning signs of hypertension emergency?
    a. Severe head ache, difficulty in seeing, vomiting, signs of bleeding
    b. Headache, nausea, difficulty in walking
    c. Nausea, headache, no difficulty in seeing or speaking
    d. Vomiting, headache, difficulty in hearing

EMERGENCY MEASURES:

15. What is the safest drug to be administered during heart attack?
    a. Patient's own pain medications
    b. Chewable aspirin- 325mg
    c. Antihypertensive drug
    d. Any pain medications

16. What is the correct order of airway, breathing, circulation in CPR process?
    a. Airway, Breathing, Circulation(ABC)
    b. Airway, Circulation, Breathing (ACB)
    c. Circulation, Breathing, Airway (CBA)
    d. Circulation, Airway, Breathing (CAB)

17. What is chest compressions and rescue breaths ratio?
    a. 30 compressions : 2 rescue breaths
    b. 2 Rescue breaths : 5 abdominal thrusts
    c. 30 Chest compressions : 5 abdominal thrusts
    d. 5 abdominal thrusts : 5 back slaps

18. How much time the CPR should be continued?
    a. 2mins and 5 cycles of CPR until the patient responds
    b. 1min and 2cycles of CPR until the patient's recovery
    c. 5mins and 2cycles of CPR
    d. Continue without interruptions

19. What position should be maintained in patient with cardiac arrest after CPR?
    a. Prone position
    b. Supine position
    c. Recovery position
    d. Fowler's position

20. What emergency measures should be taken if the patient experiencing low blood pressure?
    a. Make patient to sit and relax, give caffeinated beverages
    b. Make patient to sit and relax, give fluids or buttermilk with salt
    c. Make patient to walk, give some water
    d. Make patient to walk, do not give anything orally

21. What medicine should be taken during high blood pressure?
    a. Take own medicine without consulting physician
    b. Consult physician first and take a dose of own anti hypertensive drug

c. Do not take any medication
d. Take own medicine and then consult physician

22. What measures should be taken if the person having high blood pressure with nose bleeding?
    a. Apply digital pressure over the nose
    b. Don't apply pressure on the nose
    c. Apply dressing over the nose
    d. Don't restrict the bleeding

23. What information should be given to ambulance regarding emergency?
    a. Type of emergency, condition of the patient, address and location
    b. Patient's Address and location
    c. Condition of patient and address
    d. Type of emergency of the patient

CARDIAC EMERGENCY KIT:

24. What information should be kept in cardiac emergency kit?
    a. Patient's address and phone number
    b. Patient's caregiver address and phone number
    c. Patient's relative phone numbers
    d. Patient's medical information and emergency numbers

25. What is the emergency ambulance service number in Tamilnadu?
    a. 102
    b. 108
    c. 104
    d. 107

Scoring key:

The correct answer was given "1" mark, and wrong and unattended answer was given "0" mark. The raw score was converted into % to interpret the level of knowledge. The overall score was 25, maximum score is 25 and the minimum score is 0.

Interpretation of level of knowledge

Scores	Level of Knowledge
75-100%	Adequate knowledge
51-74%	Moderately adequate knowledge
≤50%	Inadequate knowledge

Key:

1.	C	14.	A
2.	B	15.	B
3.	C	16.	D
4.	C	17.	A
5.	C	18.	A
6.	B	19.	C
7.	B	20.	B
8.	A	21.	B
9.	B	22.	A
10.	B	23.	A
11.	A	24.	D
12.	B	25.	B
13.	C		

OBSERVATIONAL CHECKLIST

Introduction: Assess the skill of the care givers of patients with chronic illness regarding Blood pressure monitoring will be demonstrated on the patient will be observed by using observational checklist.

Instructions: Tick the appropriate column based on caregiver's performance.

Sample no……..

S.NO	ASSESSMENT CRITERIA	YES	NO
1.	**Blood pressure monitoring:** Positioning the patient properly. (Sits with back straight and arm should be supported on a table or chair at the patient's heart level.		
2.	Applies the cuff over patient's upper arm and positioned one inch above the ante cubital fold.		
3.	Turns on the machine and presses start button to begin inflating the cuff.		
4.	Waits until the monitor displays the results and deflation of the cuff occurs.		
5.	Reading blood pressure value.		
6.	Switch off the machine and remove the cuff, replace it properly.		

OBSERVATIONAL CHECKLIST

Introduction: Assess the skill of the care givers of patients with chronic illness regarding Adult Basic Life Support techniques, demonstrated on a mannequin will be observed by using observational checklist.

Instructions: Tick (√) the appropriate column based on caregiver's performance.

Sample no……..

S.NO.	ASSESSMENT CRITERIA	YES	NO
1.	**Basic life support techniques:** Prompt assessment of the situation		
2.	Checks the patient's level of consciousness • By tapping the shoulders • Asks the patient "Are you ok?"		
3.	Call emergency ambulance number 108 or nearby hospital ambulance.		
4.	Places the patient in a flat, firm place and Loosens the clothing.		
5.	Performing Circulation, Airway, Breathing (CAB)technique.		
6.	Checks pulse and respiration • Locating and checking carotid pulse <10secs • Watching for breathing (chest rise) simultaneously		
7.	Performing Chest compressions • Locating the site for chest compression(Middle of the chest between the nipple point) • Placing interlocked hands on the chest. • Push the chest hard (4-5cm depth) and push fast. • Giving 100 compressions per minute.		
8.	Mouth to mouth breathing • Performs Head tilt chin lift maneuver • Checks the airway for patency. • Takes deep breath, pinch the nostrils and delivers 2 rescue mouth to mouth breaths.		
9.	Follows 30 chest compressions and 2 rescue breaths Ratio.		

S.NO.	ASSESSMENT CRITERIA	YES	NO
10.	Checks carotid pulse after 2mins of CPR.		
11.	Places the patient in a left side lying position(Recovery position)		
12.	Time management • Confident and adhered to the time management and performed the procedure.		

Scoring Key:

Each 'yes' option awarded with a score of "1" and each 'no' option was awarded as "0. The overall score is 18, maximum score is 18 and the minimum score is 0. The raw data was computed to interpret the level of skill.

Interpretation of level of skill

Scores	Level of Skill
75-100%	Good skill
51-74%	Fair skill
≤50%	Needs improvement in skill

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   þ) 9-12 Á½¢ §¿Ãí¸û
   ®) >12 Á½¢ §¿Ãí¸û

À Ì ¾ 2: þ Õ¾Â §¿¡ö ¦¾¡¼÷À¡É « Å ºÃ ¿ ¨ Ä Ó¾ø ¯¾Å ÁÕòÐÅÁ ¨ É ì Ì

¦ºø Å¾ü Ì Ó ý « Ç ôÀÐ ÀüÈ Â ¸ð¼ ¨ Á ì ¸ôÀð¼ Å É¡ò¾¡û

Ì È ôÒ: ¸§Æ ¦¸¡ Î ì ¸ôÀð Î ûÇ §¸ûÅ ¸ Ù ì Ì ºÃ Â¡É À¾ ¨ Ä (✓) Ì È Â¼×õ.

மாதிரி ± ñ .....

¦À¡ÐÅ¡É Å ÅÃí ¸û:

1. ±ó¾ ¯ÚôÒ ¯¼ø ÓØÅÐõ þÃò¾ò ¨¾ ¦ºÖòÐ¸ÈÐ?
   «) Ñ ¨ ÃÂ Ãø
   ¬) ¸ø Ä Ãø
   þ) þ¾Âõ
   ®) ã ¨ Ç

2. ¯¼ø ÓØÅ¾ü Ì õ þ¾ÂÁ¡ÉÐ ±¾ ¨ É ¦¸¡ ñ Î ¦ºø¸ ýÈÐ?
   «) **கார்பன் டை அக்ஸைடு**
   ¬) **ஆக்சிஜன் மற்றும் சத்துக்கள்**
   þ) **கார்பன் மோனோ ஆக்ஸைடு**
   ®) ÒÃ¾îºòÐ

3. þ¾Â « Å ºÃ ¿ ¨ ÄÂ ý ¦À¡Õû ± ý É?
   «) ¯Â Õì Ì ¬ Àò¾¡É ã ¨ Çì §¸¡Ç¡Ú¸û
   ¬) ¯Â Õì Ì ¬ Àò¾¡É Ñ ¨ ÃÂ Ãø §¸¡Ç¡Ú¸û
   þ) ¯Â Õì Ì ¬ Àò¾¡É þ¾Âì §¸¡Ç¡Ú¸û
   ®) ¯Â Õì Ì ¬ Àò¾¡É ¸ø Ä Ãø §¸¡Ç¡Ú¸û

4. ±ó¾ ¿ ¨ Ä ¨ Â þ¾Â §¿¡ö ºõÀó¾Á¡É « ÅÃº ¿ ¨ Ä ± ý Ú ¸Õ¾ôÀ Î ¸ÈÐ?
   «) ¿¡ûÀð¼ ¸ø Ä Ãø §¿¡ö, þ¾Â §¿¡ö, ¸ø Ä Ãø « Æüº
   ¬) Ñ ¨ ÃÂ Ãø Å ì ¸õ, Ñ ¨ ÃÂ Ãø ¦ºÂ Ä Æôò, þÃò¾¦¸¡¾ôÒ
   þ) Á¡Ã ¨ ¼ôÒ, ¾Ë÷ þ¾Â ÐÊôÒ ¿ ý Ú §À¡¾ø, Ì ¨ Èó¾/ ¯Âŗ þÃò¾ « Øò¾õ
   ®) **ஆஸ்துமா,** Ì ¨ Èó¾ þÃò¾ « Øò¾õ, Ñ ¨ ÃÂ Ãø Å ì ¸õ

5. ¯ Ä ¸ÇÅ ø ±ó¾ §¿¡ö « ¾ ¸ÙÀÊÂ¡É þÈôÒ¸ Ù ì Ì ¸¡Ã½ Á¡¸ÈÐ?
   «) ¿ÃõÒ ºõÀó¾Á¡É §¿¡ö¸û
   ¬) º Ú¿ Ã¸ §¿¡ö¸û
   þ) þ Õ¾Â §¿¡ö
   ®) Ì ¼ø §¿¡ö

6. þ¾Â « Å ºÃ ¿ ¨ Ä ì ¸¡É Ó ì ¸ Â ¸¡Ã½ í ¸û ± ý É?
   «) ¸ð Î ôÀ Î ò¾ôÀð¼ þÃò¾ º÷ì ¸ ¨ Ã « Ç×, ¸ð Î ôÀ Î ò¾Àôð¼ þÃò¾ « Øò¾õ, ¯¼ø ¦ºÂ Ä üÈ ¿ ¨ Ä
   ¬) ¸ð Î ôÀ¡¼üÈ þÃò¾ º÷ì ¸ ¨ Ã « Ç× ÁüÚõ þÃò¾ « Øò¾õ ÁüÚõ, ¯½÷î º Á ì ¸ ÁÉ « Øò¾õ, « ¾ ¸ÙÀÊÂ¡É ¯¼ø ¯ ¨ ÆôÒ
   þ) ¦¾¡¼÷óÐ À § º¡¾ ¨ É, ¯¼ø ¦ºÂ Ä üÈ ¿ ¨ Ä, Ì Î õÀ ÅÃ Ä¡Ú
   ®) Ì Î õÀ ÅÃ Ä¡Ú, ¦¾¡¼÷ À ý ¸Å É ôÒ ÁüÚõ Ó ¨ ÈÂ¡ ÁÕóÐ ± Î òÐ ì ¦¸¡ û Ù¾ø

7. ±ó¾ ÍÂ ÀÆì¸ÅÆì¸õ þ¾Â «ÅºÃ¿¨Ä¨Â «¾¸ôÀÎòÐ¸ÈÐ?
   «) ¿¡ûÀð¼¦ÅüÈ¨Ä¦ÁøÖ¾ø ÁüÚõ Ò¨¸À¢Êò¾ø
   ¬) ¿¡ûÀð¼Ò¨¸ôÀ¢Êò¾ø ÁüÚõ ÁÐ «ÕóÐ¾ø
   þ) ±ô¦À¡Ø¾¡ÅÐ Ò¨¸ôÀ¢Êò¾ø ÁüÚõ ÁÐ «ÕóÐ¾ø
   ®) ¦ÅüÈ¨Ä¦ÁøÖ¾ø ÁüÚõ ÁÐ «ÕóÐ¾ø

8. þÃò¾ ¦¸¡¾¢ôÒ «ÅºÃ¿¨Ä±ýÈ¡ø±ýÉ?
   «) ¾¢Ë¦ÃÉ þÃò¾ «Øò¾õ 180/120mmHg ìÌ §ÁÄ¡¸ «¾¸Ã¢ò¾ø
   ¬) þÃò¾ «Øò¾õ 180/120mmHg ìÌ Ì¨ÈÅ¡¸
   þ) þÃò¾ «Øò¾õ = 120/80mm Hg
   ®) 120/80mm Hg ìÌ Ì¨ÈÅ¡¸ þÃò¾ «Øò¾õ þÕò¾ø

9. þ¾Â¦ºÂøÀ¡Î¾Ë¦ÃÉ¿ýÚ§À¡¾ø±ýÀ¾ý¦À¡Õû±ýÉ?
   «) Ñ¨ÃÂ¢Ãø ÍÅ¡º¢ôÀ¨¾¾Ë¦ÃÉ¿ÚòÐ¾ø
   ¬) þ¾Âõ ÐÊôÀ¨¾¾Ë¦ÃÉ¿ÚòÐ¾ø
   þ) ã¨Ç¾Ë¦ÃÉ¦ºÂøÀÎÅ¨¾¿ÚòÐ¾ø
   ®) ¯¼ø¦ºÂøÀ¡ðÊ¨É¾Ë¦ÃÉ þÆò¾ø

10. Ì¨Èó¾ þÃò¾ «Øò¾õ±ýÀ¾ý¦À¡Õû±ýÉ?
    «) þÃò¾ «Øò¾õ 120/80 mm Hg ìÌ «¾¸Á¡¸ þÕò¾ø.
    ¬) þÃò¾ «Øò¾õ 90/60 mm Hgì Ì¸¢ú Ì¨È¾ø
    þ) þÃò¾ «Øò¾õ = 120/80 mm Hg ¬¸ þÕò¾ø
    ®) þÃò¾ «Øò¾õ 100/60 mm Hgì Ì «¾¸Á¡¸ þÕò¾ø

«¨¼Â¡Ç «È¢Ì È¢¸û ÁüÚõ Á¾¢ôÀ¢Îõ ÅÆ¢Ó¨È¸û

11. Á¡Ã¨¼ôÒì¸¡É Óì¸¢Â «È¢Ì È¢¸û±ýÉ?
    «) ¸Î¨ÁÂ¡ÆÀÃ×¸¢ýÈ¦¿ïÍÅÄ¢, «¾¸Á¡¸ Å¢Â÷ò¾ø, ãîÍò¾½Èø
    ¬) Á¡÷Òƒ ÌÆ¢ìÌ «Õ¸¢ø ÅÄ¢, ÌÁð¼ø ÁüÚõ Å¡ó¾¢
    þ) ÁüÈÀÌ¾ìÌ ÀÃÅ¡¾ ¦¿ïÍÅÄ¢, ÌÁð¼ø ÁüÚõ Å¡ó¾¢
    ®) ãîÍò¾¢½Èø, Á¡÷Òƒ ÌÆ¢ìÌ «Õ¸¢ø ÅÄ¢, Å¡ó¾¢

12. ¾¢Ë÷ þ¾Â¦ºÂøÀ¡Î¿¢ýÚÅ¢Î¾Ä¢ñÎ±îºÃ¢ì¨¸«È¢Ì È¢±ýÉ?
    «) þ¾ÂòÐÊôÒ¾¢Ë¦ÃÉ Ì¨È¾ø, º¡¾¡Ã½Á¡¸ Í Å¡º¢ò¾ø
    ¬) ¾¢Ë¦ÃÉ ÁÂí¸¢ º Ã¾ø, þ¾Âƒ ÐÊôÒ þøÄ¡¨Á, Í Å¡ºÁ¢ý¨Á «øÄÐ Í Å¡ºõ °ºÄ¡Î¾ø
    þ) þ¾Âƒ ÐÊôÒ¼ý Í Â¿¢¨É×¼ý þÕò¾ø, Í Å¡ºÁ¢ý¨Á
    ®) ¿¡Ê ÐÊôÒ þøÄ¡Áø Í Â¿¢¨É×¼ý þÕò¾ø, º¡¾¡Ã½Á¡¸ Í Å¡º¢ò¾ø

13.§¿¡Â¡Ç¢ì Ì ÁÂì¸õ, Ì Ç¢÷ó¾ ®ÃÁ¢Ì ó¾ §¾¡ø, Å¡ö ¯Ä÷¾ø ÁüÚõ ¸ñ À¡÷¨ ÅÂ¢ø þ¨¼äÚ ²üÀÎ Å¾ü¸¡É ¸¡Ã½õ ±ýÉ?

«) ¯Â÷ þÃò¾ «Øò¾õ

¬) «¾¢÷Îº¢

þ) Ì¨Èó¾ þÃò¾ «Øò¾õ

®) Á¡Ã¨¼ôÒ

14.þÃò¾ì¦¸¡¾ôÀ¢ý «ÅºÃ¿¢¨Äì¸¡É ±îºÃ¢ì¨¸ «È¢ÌÈ¢ûÂ¡¨Å?

«) «¾¢¸ôÀÊÂ¡É ¾¨ÄÅÄ¢, À¡÷ôÀ¾¢ø º¢ÃÁõ, Å¡ó¾¢, þÃò¾ô §À¡ì¸ü¸¡É «È¢ÌÈ¢ûÂ¡¨Å?

¬) ¾¨ÄÅÄ¢, Ì Áð¼ø, ¿¼ôÀ¾¢ø º¢ÃÁõ

þ) Ì Áð¼ø, ¾¨ÄÅÄ¢, À¡÷ôÀ¾Öõ §À Í Å¾Öõ º¢ÃÁÁ¢ன¨Á

®) Å¡ó¾¢, ¾¨ÄÅÄ¢, §¸ðÀ¾¢ø º¢ÃÁõ

«ÅºÃ¸¡Ä Óý¦É îºÃ¢ì¨¸¿¼ÅÊì¨¸¸û:

15.Á¡Ã¨¼ôÒ ²üÀÎõ §À¡Ð À¡Ð¸¡ôÀ¡¸ ±ó¾ ÁÕó¨¾±Î ìக§Å ñ Îõ?

«) §¿¡Â¡Ç¢Â¢ý ¦ºj¡ó¾ ÅÄ¢ ÁÕóÐ

¬) ¦ÁøÄì ÜÊÂ ¬ஸ்À¢Ã¢ý மாத்தி¨ரு - 325 Á¢.¸¢

þ) ¯Â÷ þÃò¾ «Øò¾ ±¾¢÷ôÒ ÁÕóÐ

®) ±¾¡ÅÐ ÅÄ¢ ÁÕóÐ

16.þ¾Â Ñ¨ÃÂ¢Ãø þÂì¸ Á¢ðÒ ¦ºÂøÓ¨È¢ý º¢Â¡É ÅÃ¢¨º±ýÉ?

«) Í Å¡ºôÀ¡¨¾À¡÷ò¾ø, Í Å¡ºõ «Ç¢ò¾ø, þÃò¾ ÍÆüº¢

¬) Í Å¡ºôÀ¡¨¾À¡÷ò¾ø, þÃò¾ ÍÆüº¢, Í Å¡ºõ «Ç¢ò¾ø

þ) þÃò¾ ÍÆüº¢, Í Å¡ºõ «Ç¢ò¾ø, Í Å¡ºôÀ¡¨¾À¡÷ò¾ø

®) þÃò¾ ÍÆüº¢, Í Å¡ºôÀ¡¨¾À¡÷ò¾ø, Í Å¡ºõ «Ç¢ò¾ø

17.Á¡÷Ò «Øò¾í¸û ÁüÚõ ãî Ý ðÎ¾ø Å¢¸¢¾õ ±ýÈ¡ø ±ýÉ?

«) 30 Á¡÷Ò «Øò¾í¸û: 2 ãî Ý ðÎ¾ø

¬) 2 ãî Ý ðÎ¾ø : 5 ÅÂ¢Ú ¯óÐ¾ø

þ) 30 Á¡÷Ò «Øò¾í¸û : 5 ÅÂ¢Ú ¯óÐ¾ø

®) 5 ÅÂ¢Ú ¯óÐ¾ø: 5 ÓÐ¸¢ø ¾ðÎ¾ø

18.þ¾Â Ñ¨ÃÂ¢Ãø þÂì¸ Á¢ðÒ ¦ºÂøÓ¨È ±ùÅÇ× ¸¡Ä §¿Ãò¾¢üÌ ¦¾¡¼Ã §Å ñ Îõ?

«) 2 ¿¢Á¢¼õ ÁüÚõ 5 þÃò¾ ÍÆüº¢¸û §¿¡Â¡Ç¢º¸¿¢¨Ä¨Â «¨¼Ôõ Å¨Ã

¬) 1 ¿¢Á¢¼õ ÁüÚõ 2 þÃò¾ ÍÆüº¢¸û §¿¡Â¡Ç¢Á¢Ùõ Å¨Ã

þ) 5 ¿¢Á¢¼í¸û ÁüÚõ 2 þÃò¾ ÍÆüº¢¸û ¦¸¡ñ¼ þ¾Â Ñ¨ÃÂ¢Ãø þÂì¸ Á¢ðÒ ¦ºÂøÓ¨È

®) ÌÚì¸¢Î þøÄ¡Áø ¦¾¡¼Ã §Å ñ Îõ

19. þ¾Â Ñ¨ÃÂ¢Ãø þÂì¸ Á¦ðÒ ¦ºÂøÓ¨Èì Ì À¢ý §¿¡Â¡Ç¢¨Â ±ó¾ ¿¢¨ÄÂ¢ø ÀÃ¡Á㢸ì¸ôÀ¼ §Å ñ Î õ?
   «) Ì ôÒÈ ¸¢¼òÐ¾ø
   ¬) ÁøÄ¡óÐ À Î ò¾ ¿¢¨ ÄÂ¢ø ¸¢¼ò¾ø
   þ) Á¦ðÒ ¿¢¨ Ä «øÄÐ ´Õì¸Ç¢òÐ ¸¢¼ò¾ø
   ®) ¯ð¸¡÷ó¾ ¿¢¨ ÄÂ¢ø ¸¢¼ò¾ø

20. §¿¡Â¡Ç¢ Ì¨Èó¾ þÃò¾ «Øò¾ò¨¾ «ÛÀÅ¢ò¾¡ø ±ó¾ Å¨¸Â¡É «ÅºÃ ¿¼ÅÊì¨¸±Î ì¸§Å ñ Î õ?
   «) §¿¡Â¡Ç¢¨Â ¯ð¸¡÷óÐ µö¦ÅÎ ì¸ ¦ºöÂ×õ, Ý¼¡É §¾¿÷ À¡Éí¸û «Ç¢ò¾ø
   ¬) §¿¡Â¡Ç¢¨Â ¯ð¸¡÷óÐ µö¦ÅÎ ì¸ ¦ºöÂ×õ, ¿¦Ã¡¸¡Ãò¨¾ ¾Ã§Å ñ Î õ «øÄÐ ¯ôÀ¢ð¼ ¿÷ §Á¡÷ ¦¸¡Î ì¸§Å ñ Î õ
   þ) §¿¡Â¡Ç¢¨Â ¿¼ì¸¨ÅòÐ, ¦¸¡ï ºõ ¿÷ ¾Ã§Å ñ Î õ
   ®) §¿¡Â¡Ç¢¨Â ¿¼ì¸¨ÅòÐ, ÌÊì¸±Ð×õ ¾Ãì Ü¼¡Ð

21. ¯Â÷ þÃò¾ «Øò¾õ ¯ûÇ §À¡Ð ±ó¾ ÁÕóÐ ±Î ìÅ§Å ñ Î õ?
   «) ÁÕòÐÅÃ¢ý ¬§Ä¡º¨É þøÄ¡Áø ¦º¡ó¾ ÁÕó¨¾ ±Î òÐì¦¸¡ûÇ §Å ñ Î õ
   ¬) ÁÕòÐÅÃ¼õ Ó¾Ä¢ø ¬§Ä¡º¢ò¾ôÀ¢ý ¯Â÷ þÃò¾ «Øò¾ ÁÕò¨¾ º¢Â¡É «Ç× ±Î òÐì¦¸¡û Ù¾ø
   þ) ±ó¾ Å¨¸Â¡É ÁÕó¨¾Ôõ ±Î òÐì¦¸¡ûÇì Ü¼¡Ð
   ®) ¦º¡ó¾ ÁÕó¨¾ ±Î òÐì ¦¸¡ûÇ §Å ñ Î õ «¾ý À¢È Ì ÁÕòÐÅ¨Ã ¬§Ä¡º¢ì¸×õ

22. ¯Â÷ þÃò¾ «Øò¾òÐ¼ý ãì¸¢ø þÃò¾õ ÅÊ¾ø ¯¼ÉÊÂ¡¸ ±ன ¿¼ÅÊì¨¸±Î ì¸§Å ñ Î õ?
   «) ãì¸¢ý §Áø Å¢ÃÄ¡ø «Øò¾Ú¦¸¡Î ì¸§Å ñ Î õ
   ¬) ãì¸¢ý §Áø ±ó¾ «Øò¾ò¨¾Ôõ ¾Ãì Ü¼¡Ð
   þ) ãì¸¢ý §Áø ÁÕó¨¾ §À¡Î¾ø
   ®) þÃò¾ô§À¡ì¨¸¾Î ì¸ì Ü¼¡Ð

23. þ¾Â §¿¡ö ºõÀó¾Á¡É «ÅºÃ ¿¢¨Ä **ஆம்புலன்ஸ்க்கு எந்த விவரத்தை கொடுக்க** §Å ñ Î õ?
   «) «ÅºÃò¾¢ý Å¨¸, §¿¡Â¡Ç¢Â¢ý ¿¢¨Ä, Ó¸ÅÃ¢ ÁüÚõ þ¼õ
   ¬) §¿¡Â¡Ç¢Â¢ý Ó¸ÅÃ¢ ÁüÚõ þ¼õ
   þ) §¿¡Â¡Ç¢Â¢ý ¿¢¨Ä ÁüÚõ Ó¸ÅÃ¢
   ®) §¿¡Â¡Ç¢Â¢ý «ÅºÃ ¿¢¨ÄÂ¢ý Å¨¸

þ¾Â «ÅºÃº¢¸¢î¨º ¨À:

24. þ¾Â «ÅºÃº¢¸¢î¨º ¨ÀÂ¢ø ¨Åì¸ §Å ñ ÊÂ¾¸Åø ±Ð?
«) §¿¡Â¡Ç¢Â¢ý Ó¸ÅÃ¢ ÁüÚõ ¦¾¡¨Ä§À°¢± ñ
¬) §¿¡Â¡Ç¢Â¢ý À¡Ð¸¡ôÀ¡ÇÃ¢ý Ó¸ÅÃ¢ ÁüÚõ ¦¾¡¨Ä§À°¢± ñ
þ) §¿¡Â¡Ç¢Â¢ý ¯ÈÅ¢É÷¸Ç¢ý ¦¾¡¨Ä§À°¢± ñ ¸û
®) §¿¡Â¡Ç¢Â¢ý ÁÕòÐÅ ÌÈ¢ôÒ¸û ÁüÚõ «ÅºÃ± ñ ¸û

25. **தமிழ் நாட்டில் அவசர ஆம்புலன்ஸ் சேவைக்கான எண் எது?**
«) 102
¬) 108
þ) 104
®) 107

மதிப்பி îம் Ó¨È:

சரியான விடைக்கு தலா ஒரு மதிப்பெ ñ ணும் ÁüÚõ தவÈ¡ன அல்லது விடையÇ¢க்காத கே û விக்கு பூஜ்ஜியம் மதிப்பெ ñ ணும் வழ í கப்படும். சேகரிக்கப்பட்ட விவர í க û மதிப்புக்கூட்டல் மு¨ Èயில் அÇவிடப்படும்.

«È¢×ò¾È¨É Å¨¸ôÀ Î òÐ¾ø

மதிப்பெ ñ க û	**அÈ¢வுத்திÈன் அÇவு**
75-100%	போதுமான அÈ¢வுத்திÈன்
51-74%	சுமாரான அÈ¢வுத்திÈன்
≤50%	போதுமான அÈ¢வுத்திÈன் அüÈ

சரியான விடை:

1.	இ	14.	அ
2.	ஆ	15.	ஆ
3.	இ	16.	ஈ
4.	இ	17.	அ
5.	இ	18.	அ
6.	ஆ	19.	இ
7.	ஆ	20.	ஆ
8.	அ	21.	ஆ
9.	ஆ	22.	அ
10.	ஆ	23.	அ
11.	அ	24.	ஈ
12.	ஆ	25.	ஆ
13.	இ		

APPENDIX – J

CODING FOR DEMOGRAPHIC VARIABLES

A) Demographic variables of patients	Code No.
1. Age in years	
a) 40-50	1
b) 51-60	2
c) 61-70	3
d) > 70	4
2. Gender	
a) Male	1
b) Female	2
3. Religion	
a) Hindu	1
b) Christian	2
c) Muslim	3
d) Others	4
4. Type of family	
a) Nuclear family	1
b) Joint family	2
c) Extended family	3
d) Separated family	4
e) Others	5
5. Dietary pattern	
a) Vegetarian	1
b) Non Vegetarian	2

6. Education
    a) Professionals or honors 1
    b) Graduate or post graduate 2
    c) Intermediate or post high school diploma 3
    d) High school certificate 4
    e) Middle school certificate 5
    f) Primary school certificate 6
    g) Non – literate 7
    h) Others 8

7. Occupation
    a) Professionals 1
    b) Semi professionals 2
    c) Clerical, shop owner/farmers 3
    d) Skilled 4
    e) Semi skilled or Unemployed 5
    f) Unskilled 6
    g) Others 7

8. Family monthly income in Rupees
    a) <5000 1
    b) 5001 to 15000 2
    c) 15001 to 25000 3
    d) >25000 4

9. History of Co-morbid illness (Years of co morbidity and Regular treatment or follow up)
    1) Diabetes mellitus
        a) < 5 years 1
        b) 5 – 10 years 2
        c) > 10 years 3

- Regular treatment or follow up
  a) Yes 1
  b) No 2

2) Hypertension
   a) < 5 years 1
   b) 5 – 10 years 2
   c) > 10 years 3

- Regular treatment or follow up
  a) Yes 1
  b) No 2

3) Chronic kidney disease
   a) < 5 years 1
   b) 5 – 10 years 2
   c) > 10 years 3

- Regular treatment or follow up
  a) Yes 1
  b) No 2

10. Dependency of the patient on caregivers
    a) Wholly dependent 1
    b) Partially dependent 2
    c) Independent 3

B) DEMOGRAPHIC VARIABLES OF CAREGIVERS **Code No.**

1. Age in years

   a) 21-30 1
   b) 31-40 2
   c) 41-50 3
   d) > 50 4

2. Gender

   a) Male 1
   b) Female 2

3. Degree of relationship with the patient

   a) First degree 1
   b) Second degree 2
   c) Others 3

4. Education

   a) Professionals or honors 1
   b) Graduate or post graduate 2
   c) Intermediate or post high school diploma 3
   d) High school certificate 4
   e) Middle school certificate 5
   f) Primary school certificate 6
   g) Non – literate 7
   h) Others 8

5. Occupation
    a) Professionals 1
    b) Semi professionals 2
    c) Clerical, Shop owner/Farmers 3
    d) Skilled 4
    e) Semi skilled or Unemployed 5
    f) Unskilled 6
    g) Others 7

6. Duration of time spent with the patient per day
    a) 1-4 hours 1
    b) 5-8 hours 2
    c) 9-12 hours 3
    d) >12 hours 4

APPENDIX - K

BLUE PRINT OF DATA COLLECTION TOOL

S.NO.	CONTENT	ITEM	TOTAL ITEM	PERCENTAGE
1.	Demographic variables of patients	1 - 11	11	100%
2.	Demographic variables of caregivers	1 - 6	6	100%
3.	Structured knowledge questionnaire			
	- General information	1 -10	10	40%
	- Signs and symptoms, assessment techniques	11-15	4	16%
	- Emergency measures	16-23	9	36%
	- Cardiac emergency kit	24-25	2	8%
4.	Observational checklist			
	- Blood pressure monitoring steps	1-6	6	33.3%
	- Adult basic life support techniques	7-18	12	66.7%
	Total	60	60	100%

APPENDIX – L

INTERVENTION TOOL

- **Lecture cum discussion** using power point presentation on Emergency Preparedness Protocol.
- **Preparation of cardiac emergency kit.**
- **Demonstration and re demonstration** of the steps of Blood pressure monitoring on the patients and Adult BLS techniques on a mannequin.
- **Information booklet** regarding Emergency Preparedness Protocol information.

CARDIAC EMERGENCY KIT

S.No	Supplies	Rationale
1.	Patient's details with medical information	To know the details of the patient.
2.	Own medications list	To know the patient's own medications and its expiry date.
3.	B.P. apparatus - 1	To check the blood pressure.
4.	Glucometer – 1(if needed)	To monitor blood glucose level.
5.	Emergency ambulance numbers and patient's physician numbers list	To avail ambulance services and contact physician.
6.	Uncoated Tab.Aspirin (chewable)- 325mg (adult) - 1 (or) low dose baby aspirin 81mg - 4	Anti platelet drug to treat chest pain.
7.	Tab. Nitroglycerine -5mg - 3	Anti anginal drug to treat chest pain.
8.	Gauze pad	To wipe if nose bleed occurs.
9.	Containers with label – 1 or 2	To keep medicines.
10.	Salt or ORS pocket -1	Helps to increase blood pressure in case of hypotension.
11.	Glass and spoon – Each 1	To mix salt water or ORS solution.
12.	Tissue papers - 3	To wipe the secretions
13.	Scissor - 1	To cut the medicines or covers.
14.	Emergency preparedness protocol • Warning signs of cardiac emergency • Assessment techniques • Basic steps in CPR • Emergency measures.	To manage cardiac emergencies
15.	Kidney tray - 1	To collect waste.

DEMONSTRATION OF BLOOD PRESSURE MONITORING STEPS AND ADULT BLS TECHNIQUES

Demonstration and re demonstration of the steps of Blood pressure monitoring on the patients and Adult BLS techniques on a mannequin done for a group of 5 to 10 care givers of patients with chronic illness for 10mins.

A. Blood pressure monitoring steps:

- Explain the procedure to the patient and make the patient to sit with back straight and supported, keep the patient's feet flat on the floor.
- Supports the patient's arm on a table, desk, or the arm of a chair and arm should rest at the level of patient's heart.
- Places the cuff over the bare upper arm with the artery mark positioned directly over the brachial artery. The bottom edge of the cuff should be positioned approximately one inch (2-3cm) above the ante cubital fold.
- Turn on the machine and press specific button to inflate the cuff, to begin measuring the blood pressure.
- Once the cuff is inflated, instruct the patient not to move or talk and wait until the testing stops and the cuff deflates or the monitor displays the results.
- Reading the blood pressure value and switch off the machine.
- Removes the cuff from arm and replaces it properly.

B. Adult BLS Techniques:

- **C**onfirm the patient's environment is safe.
- Assess the patient's level of consciousness by tapping the shoulder and asks "Are you ok?"
- Assess the situation for help and call emergency ambulance number 108
- If unresponsive, immediately initiate Basic Life Support measures.
- Place the patient in a flat, firm place and loosen the clothing.
- Check the carotid pulse (in neck) <10seconds [Place the index and middle fingers of your hand on the patient's trachea and then slide your fingers

while gently pressing on the neck until you find the groove running parallel to the airway] and watch for breathing (chest rise and fall) simultaneously.

- If no pulse or breathing, initiate CPR immediately.
- Kneel down at the side of the patient and places one hand on top of the other, in the middle of the chest between the nipple points.
- Push the chest hard (4 - 5cm depth) and push fast and give at least 100compressions per minute.
- Give 30 chest compressions followed by 2 mouth to mouth respirations. (30:2 ratio)

Rescue breaths:

- **Head tilt chin lift maneuver**: With the person's head tilted back slightly and the chin lifted.
- **Mouth to mouth respiration:** Pinch the nose and place the mouth over the person's mouth to make a complete seal. Blow into the person's mouth to make the chest rise. Deliver two rescue breaths.

- After 2mins, check the carotid pulse in neck and breathing.
- If no pulse and breathing, Continue CPR, until the patient responds or ambulance arrives.
- If pulse is felt and patient is spontaneously breathing, place the patient in a left side lying position (Recovery position).
- Once ambulance arrives, shift the patient to hospital immediately for further care.

LESSON PLAN ON PRE HOSPITAL MANAGEMENT ON CARDIAC EMERGENCIES

LESSON PLAN

Subject	**:**	**Effectiveness of Emergency Preparedness Protocol regarding pre hospital management of Cardiac emergencies.**
Group	**:**	Patients with chronic illness and their caregivers
Place	**:**	ESI Medical hospital, Ayanavaram, Chennai and Government Peripheral Hospital, Periryar Nagar, Chennai.
Time	**:**	30 – 45 minutes
Teaching method	**:**	Lecture cum discussion, Demonstration and re demonstration.
Seating arrangement	**:**	Theatre method
Instruction mode	**:**	Tamil
Name of the investigator	**:**	Mrs.M.Karthika
Instructional Aid	**:**	Power point presentation, CPR Mannequin.

General objective: At the end of the administration of Emergency Preparedness Protocol, the patients with chronic illness and their caregivers will develop in depth knowledge regarding pre hospital management of cardiac emergencies and their care givers will develop demonstration of skill in managing cardiac emergencies.

Contributory objectives: At the end of the administration of Emergency Preparedness Protocol, the patients will be able to,

1. review the anatomy and physiology of heart
2. define cardiac emergencies
3. state the incidence of cardiac emergencies
4. specify the causes and risk factors of cardiac emergencies
5. mention the Emergency Preparedness Protocol to handle cardiac emergencies

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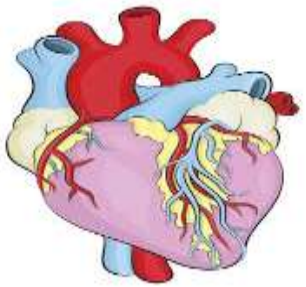
S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
1.	introduce the topic	**INTRODUCTION** Worldwide Cardiovascular diseases (CVD) are the leading cause of death and a major cause of disability and the cost productivity in adults. Non – communicable diseases (NCDS) are common cause of preventable mortality and morbidity. Major NCDs are cardiovascular diseases, diabetes mellitus, cancer, chronic lung diseases, renal failure, epilepsy. The prevalence of NCDs such as Diabetes mellitus hypertension in adults as high as 25% – 35**%.** CVD ranks first among the leading causes of death such as Hypertensive diseases, Ischemic heart diseases. People with CVDs or who are at high cardio vascular risk (due to presence of one or more risk factors such as hypertension, diabetes, hyperlipidemia or already established disease) need early detection and management. Nearly 383,000 out of hospital cardiac arrests occur annually and 88% cardiac arrests occur at home. Four out of five cardiac arrests happen at home. (**Source: World Health Organization fact sheet – May 2017)**	Investigator introduces the topic	Listening carefully
2	review the anatomy and physiology of heart.	**ANATOMY AND PHYSIOLOGY OF HEART** The cardio vascular system is made up of the heart and blood vessels. The heart is located almost in the center and left side of the chest. The adult human heart is about the size of a fist. It is responsible for circulating oxygenated blood throughout the body to supply the tissues with oxygen and nutrients.	Reviewing the anatomy and physiology	Listening Attentively

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		At an average heart rate is 72 beats per minute  • It is made up of four chambers (2 atria and 2 ventricles) that receives deoxygenated blue color blood from the body in the right side of the heart and pump out oxygen rich red color) blood through the body. • Blood vessels, which include a network of arteries and vein. Arteries transport blood from the heart to body tissues. Veins carry blood back to the heart from body parts. • There are valves present in the blood vessels of the heart to prevent backward flow of blood • An electrical system that serves as a natural pace maker and stimulates and contracts the heart muscles.		
3.	define cardiac emergencies	**Definition: Cardiac emergencies** Cardio vascular emergencies are life threatening disorders that must be recognized immediately to avoid delay in treatment and to minimize complications and mortality.	Defining the cardiac emergencies	Listening

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		Patients may present with chest pain, sudden cardiac arrest, sudden decrease or increase in blood pressure, severe infections in heart (Pericarditis) sudden irregular heart beat (Dysrhythmias), heart is unable to pump adequate blood (Heart failure).		
4.	state the incidence of cardiac emergencies	**Incidence Of Cardiac emergencies:** • Globally CVDs are considered as the leading cause of death estimated around 17.7million people (31%) died in 2015. **(Source: WHO fact sheet – May 2017)** • Reported incidence of 4, 24,000 people experienced out of cardiac arrests in US. In this 10.6% survived by emergency medical services, by stander CPR (Overall 40.8%) **(Source :AHA's heart and strokes statistics – 2014 update)** • Earlier intervention in case of cardiac emergency increases the chances of survival and aids in better quality of life	Stating the incidence of cardiac emergencies	Listening
5.	specify the causes and risk factors of cardiac emergencies	**Risk factors / Causes:** • Chronic Smoking and Alcoholism • Family history of Heart Attack / sudden Cardiac arrest • Uncontrolled blood sugar • Uncontrolled blood pressure • Obesity – BMI > 30 Kg/Sq M	Explaining the risk factors	Listening

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		• Increased LDL Cholesterol • Intense physical activity / Heavy physical activity • Structural changes of the heart (enlarged heart) • Major blood loss or Fluid Loss • Very low blood levels of Potassium or Magnesium • Strong and acute emotions and emotional stress • No regular follow up • Irregular medication usage • Physical inactivity • Having a heavy meal and exposure to cold Environment		
6.	mention the Emergency Preparedness Protocol to handle cardiac emergencies.	**EMERGENCY PREPAREDNESS PROTOCOL** **a) Chest pain** **Definition** It is a medical emergency. It is the death or damage to the heart muscles due to inadequate supply of blood to the heart muscle causing chest pain which occurs intermittently over a long period with same pattern of onset, duration and intensity of symptoms.	Explaining and demonstrating	Listening

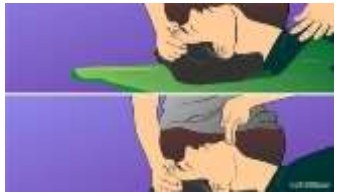
S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		Signs And Symptoms: 1. Chest Pain o Type - Severe , heaviness tightness, pressure, burning and crushing o Lasting for 5 - 15 minutes. Not relieved by rest or position change or nitrate administration. (Hall mark sign of Myocardial infarction) o Pain in the center of the chest or epigastric region may radiate to neck, jaw, left arm, shoulder or back. o Commonly occur in early morning which lasts for 20 minutes or more 2. Shortness of breath. 3. Feeling of vomiting 4. Weakness, light headedness. 5. Un usual fatigue 6. Profuse sweating, flushing 7. Sudden heaviness, weakness, aching in one or both arms. 8. Sudden increase or fall in blood pressure. 9. Irregular heart heat, palpitation, giddiness. **Simple Assessment Techinques:** 1. It is important to assess the person if experiencing the chest pain.		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		2. Make the patient to sit comfortably. 3. The PQRST method of assessing pain is a valuable tool for the selection of appropriate treatment immediately. **Position:** Where is the pain? **Quality:** What does the pain feel like (sharp, dull , burning) **Radiation:** Does the pain move anywhere? (jaw, shoulder, left arm) **Severity:** Rate the pain on a scale (between 0 – 10) tolerable or heavy pain) **Timing:** When did the pain start? Is it continues (lasting more than 20 mins) **Aggravating factors;** What makes it worse? (walking, climbing steps, heavy physical activity) **Alleviating factors:** What makes it better (Rest, food) Associated symptoms: any other symptoms/ (nausea, vomiting, profuse sweating, giddiness, palpitation) **Emergency Measures / Protocol:** If you suspect a patient having a heart attack / chest pain consider doing the following. • Make the patient to be in a comfortable sitting position. • Call 108 for an emergency ambulance or the nearby hospital Ambulance. • Loosen the tight clothing and make the patient calm.		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		• Instruct the patient to breath slowly and deeply. • Provide adequate ventilation to the patient. (e.g.) Electric fan or air conditioning. • Check response of the patient intermittently • If the patient is having signs and symptoms of chest pain or heart attack, and the patient has no allergy or contra indications(recent bleeding) to aspirin, administer 1 adult (chewable) 325mg tablet or 4 low dose baby aspirin(81mg each), chewed or swallowed until the ambulance arrives.(**AHA First Aid Guidelines,2015**) • If the patient is having chest pain more than 5mins, administer up to 3 nitroglycerine tablets at the intervals of 3 – 5minutes until the pain is relieved or ambulance arrives. Make sure the patient's blood pressure is more than 100/60mmHg. • Re assure the patient that you have called for medical help and stay with him/her until ambulance arrives • Finally transport the patient as quickly as possible for further treatment to save the golden hour (first hour after the onset of chest pain or sudden cardiac arrest. **b) <u>Sudden Cardiac Arrest</u>** **Definition:** It is a situation that occurs when the heart suddenly stops beating effectively and abruptly		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		stops pumping the blood to the vital organs of the body. About 95% of individuals who have sudden cardiac arrest die within an hour. **Warning Signs snd Symptoms:** 1. Sudden collapse /loss of consciousness 2. Absence of heartbeat or pulse 3. Gasping or no breathing Other signs include- 1. Racing heartbeat 2. Dizziness 3. Chest pain 4. Breathing difficulty 5. Nausea and vomiting **Assessment Techniques:** If someone suffering from sudden cardiac arrest – • Assess the patient for sudden loss of consciousness • No response to verbal tapping on shoulders • No normal breathing or gasping. • Absence of heart beat or pulse.		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		• Assess the situation and call for help. **Emergency Measures / Protocol**: • Call Emergency ambulance number 108 or nearby ambulance helpline number. • Check the safety of the patient. • Make the patient to lie down straight in a flat surface. • Check for response by tapping the shoulders and asking "Are you ok?"   • If unresponsive, initiate basic life support measures. • Check pulse (carotid) <10 seconds and for breathing simultaneously. • If no pulse or breathing, Initiate cardio pulmonary resuscitation (CPR).  • Start chest compressions by placing both hands (interlaced fingers) at the center of the chest. Push hard (5cm deep), push fast. 100 compressions per minute.		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		• 30 chest compressions followed by 2 rescue breaths (mouth to mouth respiration) until the person responds or help arrives.   • After 5 cycles of CPR or 2mins, check the pulse. If no pulse continue CPR • Place the patient in recovery position. (left side lying position)  • Once ambulance arrives hand over the patient to the health care provider and shifts the patient to hospital. **c) <u>Hypotensive Emergency</u>:** **Definition:** Low blood pressure medically known as hypotension occurs when a person's blood pressure is lower than 90/60mmHg. The normal blood pressure for an average healthy adult is lower than 120/80mmhg.		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		Types: 1. **Orthostatic hypotension**: A change in blood pressure from sitting or lying to standing position. 2. **Post - prandial hypotension**: A fall in systolic blood pressure (20mmHg) within 75mins after eating. 3. **Neutrally mediated hypotension**: A change in blood pressure occurs while standing for a long time and from emotionally distressing incidents. 4. **Severe hypotension:** A change in blood pressure occurs associated with shock and most dangerous. **Signs and Symptoms:** • Unexplained weakness • Trouble seeing (blurring of vision) • Nausea and vomiting • Dryness of mouth • Cool clammy skin • Sudden fall and unconsciousness • Tachypnea , confusion		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		Assessment Techniques: • Assess the conscious level of the patient by calling the name. • Assess the signs and symptoms of hypotension.(fainting, cold clammy skin) • Measure blood pressure of the patient. **Emergency Measures / Protocol:** • Make the person to sit on a chair or lie in a comfortable position. • Elevate the foot end of the patient by placing pillows underneath the foot. • Provide salt water or butter milk or oral rehydration solution (ORS) to the patient. • Contact medical attention by calling 108 for an emergency ambulance or nearby hospital ambulance. **d) <u>Hypertensive Emergency</u>** **Definition:** Hypertensive emergency or high blood pressure which develops over hours to days, in which a patient's Blood Pressure is s elevated >180/120 mm Hg , which results in acute target organ damage especially damage to nervous system. **Warning Signs And Symptoms:** • Head ache		

S. No.	Contributory objectives	Contents	Investigators activity	Learners activity
		• Fatigue • Confusion or forget fullness • Excessive sweating or dizziness • Sudden fall • Trouble in speaking or understanding the speech • Trouble in seeing • Nose bleeding • Numbness in hands and feet • Weakness or numbness in face or one side of body • Fits **Assesment Techniques:** • Assess the level of consciousness • Assess for the warnings signs of high blood pressure(Head ache, trouble in seeing and speaking, any signs of bleeding) • Monitor the patient's blood pressure and heart rate • Assess the signs of weakness of the body.(Target organ damage) **Emergency Measures / Protocol:** • Make the patient to sit or lie down comfortably.		

<table>
<tr><th>S. No.</th><th>Contributory objectives</th><th>Contents</th><th>Investigators activity</th><th>Learners activity</th></tr>
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Advice the patient to take deep breathe to relax.
Move away from stressful situation.
Provide calm and well ventilated environment.
Provide comfort and reduce anxiety.
Keep monitoring the patient for breathing, blood pressure, pulse rate, level of consciousness and other dangerous signs (fits, weakness in the extremities).
Restrict the activities of the patient.
In case of vomiting or seizures, turn the patient to left side to prevent aspiration.
Do not give anything to eat or drink if there is alteration in level of consciousness.
Avoid caffeine or alcohol containing beverages.
If the patient is on anti hypertensive drugs, contact physician over phone and administer a dose of antihypertensive medication as adviced by the physician.
Call 108 or nearby hospital ambulance to seek medical attention and quickly shift the patient to the hospital.

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<u>Cardiac Emergency Kit :</u>
<table>
<tr><th>S.No</th><th>Supplies</th><th>Rationale</th></tr>
<tr><td>1.</td><td>Patient’s details with medical information</td><td>To know the details of the patient.</td></tr>
<tr><td>2.</td><td>Own medications list</td><td>To know the patient’s own</td></tr>
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S. No.	Contributory objectives	Contents			Investigators activity	Learners activity
				medications and its expiry date.		
		3.	B.P. apparatus - 1	To check the blood pressure		
		4.	Glucometer - 1	To monitor blood glucose level		
		5.	Emergency ambulance numbers and patient's physician numbers list	To avail ambulance services and contact physician.		
		6.	Uncoated tab.Aspirin (chewable)- 325mg (adult) - 1 (or) low dose baby aspirin 81mg - 4	Anti platelet drug to treat chest pain.		
		7.	Tab. Nitroglycerine -5mg - 3	Anti anginal drug to treat chest pain.		
		8.	Gauze pad	To wipe if nose bleed occurs.		
		9.	Containers with label – 1 or 2	To keep medicines.		
		10.	Salt or ORS pocket -1	Helps to increase blood pressure in case of hypotension.		
		11.	Glass and spoon – Each 1	To mix salt water or ORS solution.		
		12.	Tissue papers - 3	To wipe		
		13.	Scissor - 1	To cut the medicines or covers.		
		14.	Emergency preparedness protocol	To manage cardiac emergencies		

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<tr><th>S. No.</th><th>Contributory objectives</th><th>Contents</th><th>Investigators activity</th><th>Learners activity</th></tr>
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<table>
<tr><td></td><td>• Warning signs of cardiac emergency
• Assessment techniques
• Basic steps in cardio pulmonary resuscitation (CPR)
• Emergency measures.</td><td></td></tr>
<tr><td>15.</td><td>Kidney tray - 1</td><td>To collect waste.</td></tr>
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<tr><td></td><td></td><td><u>Conclusion</u>
.
“ BE A LIFE SAVER IN PRESERVING THE GOLDEN HOUR OF CARDIAC EMERGENCY”
Cardiac emergencies are life threatening disorders that must be recognized immediately and the Smart and Wise use of the Emergency Preparedness Protocol helps in saving the precious life of the patients with chronic illness by addressing the cardiac emergencies promptly will aid in improving their quality of life.</td><td></td><td></td></tr>
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		Ò ¨ ¸Ât ¨ Ä ¯À§Â¡ ¸tò¾ø, ¬ §Ã¡ ì ¸tÂÁüÈ ¯ ½ ×, ¯¼ø ÀÕÁý, ¯¼ø ¯ ¨ ÆôÀtý ¨ Á, Ì ÊôÀÆì ¸õ §À¡ ýÈ ¾¢Â ÀÆì ¸ í ¸ Çt Ätõóð ¿õÓ ¨ ¼Â ÀÆì ¸ÅÆì ¸ò ¨ ¾ Á¡üÈtÉ¡ø - þÕ¾Â ºõÀó¾Á¡É §¿¡Ât ÄtÕóÐ À¡Ð ¸¡òÐ ¦ ¸¡ûÇÄ¡õ. þÕ¾Â ºõÀó¾Á¡É §¿¡Ô ¨ ¼ÂÅ÷ ¸û «øÄÐ þ¾Â §¿¡ö ÅÕÅ¾ü ¸¡É «¾¢ ¸ÀÊÂ¡É அபாய ¸¡Ã½t ¸ ¨ ÇÔ ¨ ¼ÂÅ÷ ¸ ¨ Ç («¾¡ÅÐ அபாய **காரணிகளான இரத்தக்கொதிப்பு, நீரிழிவு நோய், ஹைபர்ல**tÀtÊÁtÂ¡) ¬ÃõÀ ¿t ¨ ÄÂt§Ä§Â ¸ ñ ¼ÈtóÐ உரிய ºt ¸tî ¨ ºÂÇtò¾ø. ¯Ä ¸ÇÅtø Á¡Ã ¨ ¼ôÒ §¿¡ö ÅÕ¼ò¾üÌ 383,000 ¿ÀÕì Ì ÁÕòÐÅÁ ¨ É ì Ì ¦ÅÇt§Â ²üÀ Î ¸týÈÐ. «¾tø 88% Å¦ðÊø ²üÀ Î ¸tÈÐ. ³ó¾tø ¿¡ý Ì ¿À÷ ¸ Ù ì Ì Á¡Ã ¨ ¼ôÒ §¿¡ö Å¦ðÊø ¿t ¸ú ¸tÈÐ. • **ã Äõ: ¯Ä ¸ Í ¸¡¾¡Ã ¨ ÁÂò¾tý ¿tÄÅÃÀðÊÂø - §Á 2017**		

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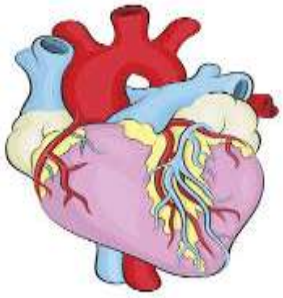
2	þÕ¾Âò¾t ý ¯¼üÜÈtÂø ÁüÚõ ¯¼ÄtÂø ÀüÈt Åt Á÷ºtò¾ø	**þÕ¾Âò¾t ý ¯¼üÜÈtÂø ÁüÚõ ¯¼ÄtÂø** 1. þÕ¾Â « ¨ ÁôÀ¡ÉÐ þÕ¾Âõ ÁüÚõ þÃò¾ ÌÆ¡ö ¸Ç¡Ä¡ÉÐ. 2. þÕ¾Âõ Á¡÷Àt ý ¿ Î ôÀ ì ¾t ¸Çt Öõ, ÁüÚõ Á¡÷Àt ý þ¼ôÀì ¸ò¾t ø ºüÚ º¡öó¾ ¿t ¨ ÄÂt ø þÕì Ì õ. 3. ÅÂÐ Åó§¾¡Õì Ì þÕ¾ÂÁ¡ÉÐ «ÅÃÅ÷ ¯ûÇí ¨ ¸ «ÇÅt ø þÕì Ì õ. þÐ ¯¼øÓØ வதும் ஆக்ஸிஜன் தாங்கிய இரத்தத்தை செலுத்தி அதன் மூலம் திசுக்களுக்கு ஆக்ஸிஜனையும் மற்றும் சத்துக்களையும் வழங்குகி ýÈÐ. þÕ¾Â ÐÊôÒ ºÃ¡ºÃt Â¡ ´Õ ¿tÁ¼ò¾t üÌ 72 Ó ¨È ÐÊì Ì õ. 	þ¾Âò¾t ý ¦À¡ÐÅ¡É Åt ÅÃí ¸ ¨Ç Át Ç¡ö× ¦ºö¾ø	Ü÷óÐ ¸ÅÉtò¾ø

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃtý ¦ºÂøÀ¡ Î	¸üÀÅÃtý ¦ºÂøÀ¡ Î
		þÕ¾ÂÁ¡ÉÐ ¿¡ý Ì « ¨È¸û (2 þ¾Â §ÁÄ ¨È¸û ÁüÚõ 2 þ¾Âì ¸Æ¨È¸û) ¦¸¡ ñ¼Ð. இதன் மூலம் ஆக்ஸிஜனேற்றம் இல்லாத நீல ¿tÈ þÃò¾ò ¨ ¾ô ¯¼Ätன் ÅÄÐ ÒÈò¾tø ¦ÀüÚ ¬ க்ஸிஜன் நிறைந்த ¿øÄ ºtÅôÒ ¿tÈ þÃò¾ò ¨ ¾ ¯¼ø ÓØÅÐõ ¦ºÖòÐ¸týÈÐ..		
		þÃò¾ ÌÆ¡ö¸û ¾Áɦ¸û ÁüÚõ ºt¨Ã¸û Å¨ÄôÀtý É¨Ä ¯ûÇ¼í¸tÂÐ.		
		¾ÁÉ¦¸û þÃò¾ò ¨¾ þÕ¾Âò¾tÄtÕóÐ ¯¼Öì Ì ¾ÁÉ¦¸û ãÄõ ¦¸¡ ñ Î ¦ºøÖ¸tÈÐ.		
		ºt¨Ã¸û ¯¼Ätý ÁüÈ Àì¾¸Çt Ätõóð þ¾ÂòÐì Ì ¾tÕõÀ×õ þÃò¾ò ¨¾ ¦¸¡ ñ Î ¦ºø¸tÈÐ.		
		þÕ¾Âò¾tÄtÕì Ì õ þÃò¾ ÌÆ¡ö¸Çtø Å¡ø×¸û « ¨ÁóÐûÇÐ þÐ þÃò¾ò¾tý Àtý§É¡ð¼ò ¨¾ ¾ Î ì¸tÈÐ.		
		´Õ Átý à ñ Î¾ø « ¨ÁôÀ¡ÉÐ, ´Õ þÂü ¨¸Â¡É þÕ¾ÂÓ Î ì¸tÂ¡¸ ¦ºÂøÀð Î þÕ¾Âò¾tý ¾¨º¸¨Ç ÍÕí¸î¦ºö¸tÈÐ.		

Å. ± ñ	Àí ¸ÇÁ¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
3.	þ Õ¾Â «Å ºÃ ¿¢ ¨ Ä ¨ Â Å ¨ ÃÂÚ ò¾ø	**Å ¨ ÃÂ ¨ È: þ Õ¾Â «Å ºÃ ¿¢ ¨ Ä** þ Õ¾Â «Å ºÃ ¿¢ ¨ ÄÂ¡ÉÐ ¯Â¢ ¨ Ã «î ÍÚòÐõ §¸¡Ç¡È¡ Ì õ þ¾ ¨ É ¬ Ãõ À ¿¢ ¨ ÄÂ¢§Ä§Â ¯¼ÉÊÂ¡ ¸ ¸ ñ ¼È¢Å¾¡ø º¢ ¸¢î ¨ º ¾¡Á¾Á¡ Å ¨ ¾Ôõ ÁüÚõ º¢ì ¸ ø ¸ û ÁüÚõ þÈôÒ ¿¢ ¨ Ä ¨ Âஏம் Ì ¨ Èì ¸ Ä¡õ. §¿¡Â¡Ç¢ ¸ û மாரடைப்பு ÅÄ¢, ¾¢Ë¦ÃÉ Á¡Ã ¨ ¼ôÒ, ¾¢Ë¦ÃÉ þÃò¾ «Øò¾õ Ì ¨ È¾ø «øÄÐ «¾¢ ¸ Ãò¾ø, þ¾Âò¾¢ø ¸ Î ¨ ÁÂ¡É ¦¾¡üÚ ºÃüÈ þ¾ÂÐÊôÒ, §À¡ÐÁ¡É þÃò¾ò ¨ ¾ þ¾õ ¦ÅÇ¢ò¾û Ç þÂÄ¡¾ ¿¢ ¨ Ä (þ¾Â ¦ºÂÄ¢ÆôÒ) §À¡ýÈÅü ¨ È ¦ ¸ ¡ ñ ¼Å÷ ¸ Ç¡ ¸ þÕôÀ¡÷ ¸ û.	þ Õ¾Â «Å ºÃ ¿¢ ¨ Ä ¨ Â Å ¨ ÃÂÚ ì ¸ ¢È¡÷	¸ Å É¢ò¾ø
4.	þ Õ¾Â «Å ºÃ ¿¢ ¨ Äì ¸ ¡É ¿¢ ¸ ú× ¸ ¨ Ç Ì È¢ôÀ¢¼× õ	**þ Õ¾Â «Å ºÃ ¿¢ ¨ ÄÂ¢ý ¿¢ ¸ ú× ¸ û:** ¯Ä ¸ ÇÅ¢ø þ Õ¾Â Í Å¡º §¿¡ö ¸ Ç¡ø «¾¢ ¸ ÀÊÂ¡É þÈôÒ ¸ û ²üÀ Î ¸ ¢ýÈÐ «¾¡ÅÐ 17.7 Á¢øÄ¢Âý (31%) 2015 ¬ ñ Î ¸ ½ ì ¸ ¢ýÀÊ þó¾ þ Õ¾Â §¿¡ö ¸ ¡ ம½¢ தÐ ûÇÉ÷.	¿¢ ¸ ú× ¸ ¨ ¨ Ç Ì È¢ôÀ¢ Î ¸ ¢È¡÷	§¸ð Ì ¾ø

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		þÕ¾Â «ÅºÃ ¿t¨Ä ¿t¸ú×¸û «¦ÁÃtì¸ ¿¡ðÊø 4,24,000 §À÷¸Çtø Á¡Ã¨¼ôÒ ãÄÁ¡¸ ²üÀð Î ûÇÐ. þ¾tø 10.6% «ÅºÃ ÁÕòÐÅ ºt¸tî¨ºÂtÉ¡ø «¾¡ÅÐ þÕ¾Â þÂì¸ Átðò ºt¸tî¨º ãÄõ ¯Ât÷ Àt¨ÆòÐûÇÉ÷ (¦Á¡ò¾Á¡¸ 40.8%). ¬ÃõÀ ¸¡Äò¾t§Ä§Â þÕ¾Â «ÅºÃ ¿t¨Ä¨Â ºÁ¡Çtôà¾¡ø «¾t¸ÙÀÊÂ¡É ¯Ât÷ þÆôÒ¸¨Ç ¾Å÷ôÀ§¾¡ Î ¿øÄ ¬ §Ã¡ì¸tÂÁ¡É Å¡úì¨¸ Ó¨Èì Ì ÅÆtÅ¨¸ ¦ºö¸tÈÐ. • **¯Ä¸ Í¸¡¾¡Ã¨ÁÂò¾tý ¿tÄÅÃÀðÊÂø-§Á, 2017.**		
5.	þÕ¾Â «ÅºÃ ¿t¨Ä ÅÕÅ¾ü¸¡É ¸¡Ã½ í¸û ÁüÚõ அபாய ¸¡Ã½t¸¨Ç Ì Ètôàt Î ¸	**அபாய ¸¡Ã½t¸û / ¸¡Ã½ í¸û:** • ¿¡ûÀð¼ Ò¨¸ò¾ø ÁüÚõ ÁÐ ÀÆì¸õ • Á¡Ã¨¼ôÒì¸¡É Ì Î õÀ ÅÃÄ¡Ú / ¾tËŗ Á¡Ã¨¼ôÒ • ¸ð Î ôÀ¡¼üÈ þÃò¾ º÷ì¸¨Ã «Ç× / þÃò¾ «Øò¾õ • ¯¼ø ÀÕÁý - ¯¼ø ¿t¨È Ì Èt Âtð ¦¼ ñ >30 ¸t.¸t/º.Átt • «¾t¸Á¡É Ì¨Èó¾ «¼÷ò¾t ¦¸¡ØôÒ ÒÃ¾õ • «¾t¸ ¯¼ø ¯¨ ழÙÒ/ ¦ºÂøÀ¡ Î • þÕ¾Â ÅÊÅò¾tø Á¡üÈõ (þÕ¾Âõ ¦ÀÃtÂ¡ததÌ ¾ø) • «¾t¸ÀÊÂ¡É þÃò¾ þÆôÒ «øÄÐ ¿tÃtÆôÒ	அபாய ¸¡Ã½t¸¨Ç Åt ÅÃÁ¡¸ Ü Ú¾ø	¸ÅÉtò¾ø

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃt ý ¦ºÂøÀ¡ Î	¸üÀÅÃt ý ¦ºÂøÀ¡ Î
		• இரத்தத்தில் பொட்டாஸியம் அல்லது மெக்நீஸியத்தில் «Ç× Át ¸ Ì ¨ ÈóÐ ¸ ¡ ½ ôÀ Î ÅÐ • ÅÖÅ ¡ É ÁüÚõ ¯ ½ ÷ î ºt ¸ ÃÁ ¡ É ÁÉ «Ø ò¾õ • ¦¾¡¼÷ÀÃ ¡ ÁÃtôÀt ý ¨ Á/ ´ Ø í ¸ üÈ ÁÕóÐ ÀÂ ý À ¡ Î • ¯¼ø ¯ ¨ ÆôÀt ý ¨ Á, «¾t ¸ Á ¡ ¸ ¯ ½ × ¯ ð ¦ ¸ ¡ û Ù¾ø ÁüÚõ Ì Çt÷ó¾ Ý ú¿t ¨ ÄÂtø þÕ ò¾ø		
6.	þÕ¾Â «ÅºÃ ¿t ¨ Ä ¨ Â ¨ ¸ Â ¡ û Å¾ü ¸ ¡ É «ÅºÃ ¸ ¡ Ä ¾Â ¡ ÷ ¿t ¨ Ä ¨ Â Ì Ètôàt Î ¸ .	**þÕ¾Â «ÅºÃ ¸ ¡ Ä ¾Â ¡ ÷ ¿t ¨ Ä ¦ ¿ÈtÓ ¨ È ¸ û:** **«) Á ¡ ÷Ò ÅÄt** **Å ¨ ÃÂ ¨ È:** þÐ ´Õ ÁÕ òÐÅ «ÅºÃ ¿t ¨ ÄÂ ¡ Ì õ. þ¾Âò¾ü Ì §À ¡ ÐÁ ¡ É «Ç× þÃò¾õ ¦ºÖò¾ ¡ ¾É ¡ ø þ¾Â ¾ ¨ º ¸ Çtý þÈôÒ «øÄÐ §º¾õ ²üÀ Î ¸ tý ÈÐ. **« ¨ ¼Â ¡ Çõ ÁüÚõ «Ètì È ¸ û:** 1. Á ¡ ÷Ò ÅÄt • Å ¨ ¸ - ¸ Î ¨ ÁÂ ¡ É, ÀÖÅ ¡ ¸ ¯ ½ ÷ ¾ø, þÚì ¸ õ, «Ø ò¾õ, ±Ãtôõ ¯ ½ ÷ × ÁüÚõ ¿ Í ì Ì õ ¯ ½ ÷ × 5-15 ¿tÁt¼ò¾ü Ì ¦¾¡¼Õõ. µö × ± Î ôÀ¾ý ã ÄÁ ¡ §Å ¡ «øÄÐ ¨ ¿ð§Ãð	Åt ÅÃtò¾ø ÁüÚõ ¦ºöÓ ¨ È Åt Çì ¸ ÁÇtò¾ø	¸ ÅÉtò¾ø

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		மாத்தி ¨Ã ±Î òÐì ¦¸¡ûÅ¾ý ã ÄÁ¡¸§Å¡ வலி ¿¢Å¡Ã½õ ²üÀ¼¡Ð. (þ¾Â ¾¢Íì¸Ç¢ø «¨¼ôÀ¢ý Óì¸¢ÂÁ¡É «¨¼Â¡Çõ) • Á¡÷பிý ¿Î Å¢ø ÅÄ¢ «øÄÐ þ¨Ãô¨À §ÁüÀÌ¾¢ ÀÌ¾¢Â¢ø ÅÄ¢ «øÄÐ ¸ØòÐ, ¾¡¨¼, þ¼Ð ¨¸, §¾¡û «øÄÐ ÓÐÌÒÈò¾¢üÌ ÅÄ¢ ÀÃ×¾ø. • ¦À¡ÐÅ¡¸ Å¢ÊÂü¸¡¨ÄÂ¢ø 20 ¿¢Á¢¼í¸û «øÄÐ «¾üÌ õ «¾¢¸Á¡É ¸¡Ä «ÇÅ¢ø ²üÀÎ õ. 2. ÍÅ¡ºì Ì ¨È× 3. Å¡ó¾¢ ÅÕÅ¾ü¸¡É ¯½÷× 4. ÀÄÅ£Éõ, ¾¨Ä §Äº¡¸ þÕôÀÐ §À¡ø ¯½÷¾ø 5. அதிகப்பÊயான §º¡÷×, ÁÂì¸õ 6. «¾¢¸Á¡¸ Å¢Â÷ò¾ø 7. ¾¢Ë¦ÃÉ ÀÖÅ¡¸ ¯½÷¾ø, ÀÄÅ£Éõ, ´ýÚ «øÄÐ þÃñ Î ¨¸¸Ç¢Öõ ÅÄ¢ 8. ¾¢Ë¦ÃÉ þÃò¾ «Øò¾õ ¯Â÷× «øÄÐ Ì ¨È¾ø 9. º£üÈ þ¾Âத்ÐÊப்Ò, À¼ôÀ¼ôÒ,		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		±Ç¢ ¨ ÁÂ¡ ¸ ÁÂ¾¢ôÀ¢ Î õ Ó ¨ È: 1. ´ Õ ¿À÷ Á¡÷Ò ÅÄ¢ ¨ Â ¯ ½ ÷ó¾¡ ø « Å ¨ Ã ÁÂ¾¢ôÀ¢¼ §Å ñ ÊÂÐ Á¢ ¸ « Åº¢Âõ. **ÅÄ¢Â¢ý ¿¢ ¨ Ä:** ± í Ì ÅÄ¢ ¯ ûÇÐ? **ÅÄ¢Â¢ý ¾ý ¨ Á:** «ó¾ ÅÄ¢ ±ò¾ ¨ ¸Â¾¡ ¸ ¯ ½Ãô À Î ¸¢ÈÐ (Ü÷ ¨ ÁÂ¡ ¸, Áó¾Á¡ ¸, ±Ã¢î º Ä¡ ¸) **ÅÄ¢ ÀÃ×¾ø:** «ó¾ ÅÄ¢ Áü ¨ ÈÂ À Ì ¾¢ ¸ Ù ì Ì ÀÃ× ¸¢È¾¡? (¾¡ ¨ ¼, §¾¡û, þ¼Ð ¨ ¸) **ÅÄ¢Â¢ý ¾¢ÅÃõ:** ´ Õ «Ç ¨ ÅÂ¢ø ÅÄ¢Â¢ý ¾ý ¨ Á ¨ Â Ì È¢ôÀ¢¼×õ (0-10ü Ì û ¾¡ í ¸ ì Ü ÊÂ « øÄÐ «¾¢ ¸ ÀÊ¡É ÅÄ¢) **§¿Ãõ:** ±ô ¦À¡ØÐ «ó¾ ÅÄ¢ ¬ÃõÀÁ¡ ¸¢ÈÐ? «Ð ¦¾¡¼÷¸¢È¾¡? (20 ¿¢Á¢¼í ¸ Ù ì Ì §Áø ÅÄ¢ þ Õ ì ¸¢ÈÐ) **ÅÄ¢ «¾¢ ¸Ã¢ì Ì õ ¸¡Ã½¢ ¸ û:** ±ந்த ¦சயல் ÅÄ¢ ¨ Â §Á¡ºÁ ¨ ¼Â ¦ºö ¸¢ÈÐ? (¿¼ôÀÐ, ÀÊ ²ÚÅÐ, «¾¢ ¸ Á¡É ¯¼ø ¦ºÂøÀ¡ Î) **ÅÄ¢ Ì ¨ ÈÔõ ¸¡Ã½¢ ¸ û:** ±Ð ÅÄ¢ ¨ Â Ì ¨ ÈÂ ¦ºö ¸¢ÈÐ (µö×, ¯ ½ ×) **¦¾¡¼÷¨ ¼Â «È¢ Ì È¢ ¸ û:** ÁüÈ «È¢ Ì È¢ ¸ û / Ì Áð¼ø, Å¡ó¾¢, Å¢¼¡Á ø ÅÂ¢÷ò¾ø, ÁÂì ¸ õ, þ¾Âõ §Å ¸ Á¡ ¸ ÐÊò¾ø)		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		« Åº Ã º¢ ¸¢î ¨ º ¸ û / ¦¿È¢Ó ¨ È ¸ û: §¿¡Â¡Ç¢ ¸ Ù ì Ì Á¡Ã ¨ ¼ôÒ / Á¡÷Ò ÅÄ¢ þ ÕôÀ¾¡ ¸ ºó§¾ ¸ôÀð¼¡ ø ¸¦úக ¸ ñ ¼Å¡Ú ¦ºöÂ×õ: • §¿¡Â¡Ç¢ ¨ Â Åº¾¢Â¡ ¸ ¯ð ¸ ¡Ã ¦ºöÂ §Å ñ Î õ. • **அவசர ஆம்புலன்ஸ் 108** ³ « ¨ Æì ¸ ×õ « ø ÄÐ « Õ ¸ ¢ø ¯ûÇ **மருத்துவமனை ஆம்புலன்ஸை அழைக்கவும்.** • þ Ú ì ¸ Á¡ ¸ « ½¢ó¾ ¯ ¨ ¼ ¨ Â ¾Ç÷ò¾ §Å ñ Î õ. • §¿¡Â¡Ç¢ ¨ Â « ¨ Á¾¢ôÀ Î òதி ¦ÁÐÅ¡ ¸ ×õ ÁüÚõ ¬ ழ்óÐ ã îசுÅ¢¼ «È¢×Úò¾ §Å ñ Î õ. • §¿¡Â¡Ç¢ì Ì ¸ ¡ü§È¡ð¼Á¡ ¸ þ Õ ì ¸ ÅÆ¢ ¦ºöÂ §Å ñ Î õ (¯.õ: Á¢ý ÅÄ¢ºÈ¢ « ø ÄÐ ².º¢) • þ ¨ ¼Å¢¼¡Á ø §¿¡Â¡Ç¢Â¢ý þ Â ì ¸ ò ¨ ¾ ¬ Ã¡Â §Å ñ Î õ. • §¿¡Â¡Ç¢Â¢¼õ Á¡÷Ò ÅÄ¢ « ø ÄÐ Á¡Ã ¨ ¼ôÀ¢ü ¸ ¡É « ¨ ¼Â¡Çõ ÁüÚõ «È¢ Ì È¢ ¦¾ýÀð¼¡ø, ÁüÚõ «ó¾ §¿¡Â¡Ç¢ì Ì ´ ùÅ¡ ¨ Á þ ø Ä¡¾¢Õó¾¡ø « ø ÄÐ **ஆஸ்பிரின் மாத்திரைக்கு** ±¾¢÷ « ¨ ¼Â¡Ç í ¸ û (ºÁ¢À ¸ ¡Ä þ Ãò¾ô§À¡ ì Ì) þ ø Ä¡¾¢Õó¾¡§Ä¡ ÅÂ¾¡§É¡Õì ¸ ¡É 325		

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃt ý ¦ºÂøÀ¡ Î	¸üÀÅÃt ý ¦ºÂøÀ¡ Î
		மி.கி மாத்திரை அல்லது 4 குறைந்த அளவு குழந்தைக்கு தரும் ஆஸ்பிரின் (81 மி.கி. ஒவ்வொன்றாக), மென்றோ அல்லது முழுங்கவோ ஆம்புலன்ஸ் ÅÕõ Å ¨Ã ¦ ¸ ¡ Î ì ¸ §Å ñ Î õ. **(« ¦ÁÃt ì ¸ þ¾Â º í ¸ õ, Ó¾Ö¾Åt ÅÆt ¸ ¡ ð Î ¾ø ¸ û, 2015).** • §¿ ¡ Â ¡ Çt ì Ì Á ¡ ÷Ò ÅÄt 5 ¿t Át ¼ò¾ü Ì §Áø þÕó¾ ¡ ø, 3 Ó¾ø 5 ¿t Át ¼ ¸ ¡ Ä þ ¨¼ ¦ ÅÇt Ât ø 1 (3 ¾¼ ¨ Å ì Ì §Áò ¦ ¸ ¡ Î ì ¸ ì Ü¼ ¡ Ð) நைட்ரோ க்ளிஸரின் மாத்திரை ¨ Â ÅÄt Ì ¨ ÈÔõ Å ¨ Ã§Â ¡ « ø Ä Ð ஆம்புல்ன்ஸ் வரும் வரையோ கொடுக்க வேண்டும். §¿ ¡ Â ¡ Çt Ât ý þÃò¾ « Ø ò¾õ 100/60 mmHg. «¾t ¸ Á ¡ ¸ þÕôÀ ¨ ¾ ¯ Ú¾t ¦ ºöÐ ¦ ¸ ¡ ûÇ §Å ñ Î õ. • §¿ ¡ Â ¡ Çt ì Ì ¿ ¦ í ¸ û ÁÕòÐÅ ¯¾Åt ¨ Â §¸ ¡ Ãt þÕôÀ¾ü ¸ ¡ É ¯ ò¾tÃÅ ¡ ¾ò ¨ ¾ « Çtò Ð « Å÷ ¸ ள் உடன் ஆம்புலன்ஸ் வரும் வரை þÕ ì ¸ §Å ñ Î õ. • þÚ¾tÂ ¡ ¸ ¨ ¼ º t ¦ À ¡ ý É ¡ É ´ Õ Á½t §¿ Ãò ¨ ¾ (Á ¡ ÷Ò ÅÄt « ø Ä Ð ¾t Ë ¦ ÃÉ Á ¡ Ã ¨ ¼ ôÒ ² üÀð¼ Àt È Ì ÅÕõ ´ Õ Á½t §¿ Ãõ) Å ¦ ½ ¡ ì ¸ Á ø §¿ ¡ Â ¡ Çt ¨ Â º ¦ ì ¸ t Ã Á ¡ ¸ §Áò º t ¸ t î ¨ º « Çt ì ¸ ÁÕòÐÅÁ ¨ É ì Ì ¦ ¸ ¡ ñ Î ¦ º ø Ä §Å ñ Î õ.		

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃt ý ¦ºÂøÀ¡ Î	¸ üÀÅÃt ý ¦ºÂøÀ¡ Î
		¬) ¾Ë¦ÃÉ ²üÀ Î õ Á¡Ã¨ ¼ôÒ: **Å ¨ÃÂ ¨ È:** ¾Ë¦ÃÉ þ¾ÂÁ¡ÉÐ ¾ÈõÀ¼ ÐÊôÀ¨¾ ¿ÚòÐÅÐõ ÁüÚõ ¾Ë¦ÃÉ ¯¼Ät ý ÁüÈ Ó ì ¸ÂÁ¡É ¯ÚôÒ ¸ Ù ì Ì ¦ºøÖõ þÃò¾ò ¨¾ ¿ÚòÐõ §À¡Ð ²üÀ Î ¸ ýÈÐ. 95% ¿À÷ ¸ û ¾Ë¦ÃÉ Á¡Ã¨ ¼ôÒ ²üÀð¼ ´Õ Á½ § ¿Ãò¾ø ÁÃ½ ì ¸ ýÈÉ÷. **±îºÃì ¨ ¸ « ¨ ¼Â¡Ç í ¸ û ÁüÚõ «È ì È ¸ û:** 1. ¾Ë¦ÃÉ ¿ ¨ Ä ¾ Î Á¡È Å ØÅÐõ / ÍÂ ¿ ¨ É Å Æò¾ø 2. þ¾Â ÐÊôÒ « øÄÐ ¿¡Ê ÐÊôÒ þ øÄ¡¾ Õò¾ø 3. ã î Í Å ¼ ¾½ ÚÅÐ « øÄÐ ã îº ý ¨ Á **ÁüÈ «È ì È ¸ Ç¡ÅÐ:** 1. þ¾Âõ §Å ¸ Á¡ ¸ ÐÊôÀÐ 2. ¾ ¨ Ä Í üÚ¾ø 3. Á¡÷Ò ÅÄ 4. **மூச்சு விட கஷ்டப்படுதல்** 5. Ì Áð¼ø ÁüÚõ Å¡ó¾		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡Õ Ç¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		Á¾¢ôÀ¢ Î õ ÑðÀ í ¸ û: எந்த ¿பÕ ì ¸¡ÅÐ ¾¢Ë¦ÃÉ Á¡Ã¨¼ôÒ ²üÀð¼¡ø - • அவரின் §¾¡Ç¢ø ¾ðÊ ¾¢Ë¦ÃÉ ²üÀð¼ ÍÂ ¿¢¨ É Å¢Æò¾¨ Ä Á¾¢ôÀ¢¼ §Å ñ Î õ. • º¡¾¡Ã½ Á¡¸ ã î Í Å¢¼¡ÁÄ¢ÕÀôÐ «øÄÐ ã î Íò¾¢½Èø • þ¾Â ÐÊôÒ «øÄÐ ¿¡ÊòÐÊôÒ þøÄ¡Áø þÕக்¸ ÌÁ் ¿¢¨ Ä ¨ Á ¨ Â ¬Ã¡öóÐ ¯¼§É ¯¾Å¢ì Ì «¨ ÆôÒ ù¢Î ì ¸ §Å ñ Î õ. **« Åº Ã º¢¸¢î ¨ º ¸ û / ¦¿È¢Ó ¨ È ¸ û:** • **அவசர ஆம்புலன்ஸ் 108 ³ அழைக்கவும் அல்லது ஆம்புலன்ஸ் உதவி** ± ñ Ï ì Ì « ¨ ÆôÒ Å¢ Î ì ¸ §Å ñ Î õ. • §¿¡Â¡Ç¢Â¢ý À¡Ð¸¡ô¨À ¯Ú¾¢ ¦ºய்Ð §¿¡Â¡Ç¢ ¨ Â §¿Ã¡¸ சமநி ¨ Äயில் À Î ì ¸ ¨ Å ì ¸ §Å ñ Î õ. • §¾¡Ç¢ø ¾ðÊ «Å÷ « ¨ ¾ ¯½Õ¾ ¨ Ä ºÃ¢À¡÷ì ¸ §Å ñ Î õ ÁüÚõ ¿¢í ¸ û ¿ ýÈ¡ ¸ þÕ ì ¸¢È£÷¸Ç¡ ± ý Ú § ¸ ð ¸ §Å ñ Î õ.		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		  • « ÅÃ¢¼õ ±ó¾ ´Õ ¯½÷×õ þøÄ¡¾¢ åó¾¡ø, ¯¼É¼Éшпக «ÊôÀ¨¼ Å¡úì ¨¸ ¯Â¢÷ ¸¡ì Ì õ Ó¾Ö¾Å¢ ¿¼ÅÊì ¨¸ ¸ ¨Ç ¦¾¡¼í ¸ §Å ñ Î õ. • ´§Ã §¿Ãò¾¢ø ¿¡Ê ÐÊôÒ கØòÐப்பு Ì தியில் (¸§Ã¡Êð) 10 ¦¿¡Ê¸û ÁüÚõ ã î Í Å¢ Î Å ¨¾ ºÃ¢À¡÷ì ¸×õ. • þ¾Â Ñ ¨ÃÂÃ£Ãø þÂì ¸ Á¢ðÒ Ó ¨È ¨Â (CPR) ÐÅ í ¸ §Å ñ Î õ.  • Á¡÷À¢ý ¨ÁÂ À Ì ¾¢Â¢ø þÃ ñ Î ¨¸ ¸ ¨ÇÔõ Å¢Ãø¸ û ´ ýÈ¢ ¨ ½ó¾Å¡Ú ¨ ÅòÐ «Øò¾õ ¦¸¡Î ì ¸ §Å ñ Î õ. (5 ¦º.Á¢ ¬ ÆÁ¡¸) ÀÄÁ¡¸ «Øò¾õ ¦¸¡Î òÐ, §Å¸Á¡¸ ´Õ ¿¢Á¢¼ò¾¢ü Ì 100 «Øò¾í ¸ ¨Ç ¾Ã §Å ñ Î õ.		

Å. ± ñ	Àí¸Ç¢ôÒ §¿¡ì¸í¸û	¦À¡ÕÇ¼ì¸õ	¬öÅ¡ÇÃ¢ý ¦ºÂøÀ¡Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡Î
		• 30 Á¡÷À¸ «Øò¾ò¨¾ò ¦¾¡¼÷óÐ 2 ÍÅ¡º Á¡ðÒ Ó¨È¨Â (Å¡§Â¡Î Å¡ö ¨ÅòÐ ÍÅ¡ºõ «Ç¢ò¾ø) «ó¾ ¿À÷ þÂøÒ ¿¢¨Äìì ÅÕõ Å¨Ã «øÄÐ §¸ð¼ ¯¾Å¢ ¸¢¨¼ìÌõ Å¨Ã ¦¸¡Îì¸ §Åñ Îõ.   • þõÁ¡¾¢Ã¢ 5 ÍüÚ þ¾Â Ñ¨ÃÂÃø þÂì¸ Á¡ðÒ Ó¨È¨Â (CPR) «øÄÐ 2 ¿¢Á¢¼í¸Ùìì À¢Èì கØòÐப்பì தியில் ¿¡ÊòÐÊô¨À ÁüÚõ ãîÍ Å¢ÎÅ¨¾ ºÃ¢À¡÷ì¸×õ. ¿¡Ê ÐÊôÒ þø¨Ä ±ýÈ¡ø þ¾Â Ñ¨ÃÂÃø þÂì¸ Á¡ðÒ Ó¨È¨Â (CPR) ¦¾¡¼Ã §Åñ Îõ. • §¿¡Â¡Ç¢Â¢ý ¿¡ÊòÐÊôÒ ÁüÚõ சுவாசம் சீரானால், §¿¡Â¡Ç¢¨Â Á¡ðÒ ¿¢¨ÄÂ¢ø ¨Åì¸ §Åñ Îõ (þ¼Ð ÒÈÁ¡¸ ´Õì¸Ç¢òÐ ÀÎì¸ ¨Åì¸ §Åñ Îõ) 		

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃtý ¦ºÂøÀ¡ Î	¸üÀÅÃtý ¦ºÂøÀ¡ Î
		• ஆம்புலன்ஸ் வந்தவுடன் நோயாளியை சுகாதார பணியாளர்களிடம் ´ôÀ¨¼òÐ §¿¡Â¡Çt¨ Â ÁÕòÐÁ¨ É ì Ì ± Î òÐ ¦ºøÄ §Å ñ Î õ. **þ) Ì ¨ Èó¾ þÃò¾ « Øò¾ « ÅºÃ ¿t¨ Ä** **Å ¨ ÃÂ ¨ È:** Ì ¨ Èó¾ þÃò¾ « Øò¾Á¡ É Ð ´ Õ ¿ÀÃtý þÃò¾ « Øò¾õ 90/60 mmHg ¸tú Ì ¨ Èâ¾¡ø ²üÀ Î ¸tý ÈÐ. ºÃ¡ºÃtÂ¡ É þÃò¾ « Øò¾õ ´ Õ ¬ §Ã¡ ì ¸tÂÁ¡ É மனிதனுì Ì 120/80 mmhg ஆக þÕì ¸ §Å ñ Î õ. **Å ¨ ¸ ¸ û:** 1. **¿t¨ Ä Á¡ÚÅ¾¡ø ²üÀ Î õ þÃò¾Øò¾ì Ì ¨ È×:** ¯ð ¸¡Õ¾ø / ¿tý È¿t¨ Ä/ À Î ì ¨ ¸ ¿t¨ Ä ì Ì Á¡Úõ §À¡Ð þÃò¾ « Øò¾õ Á¡Ú ¸tý ÈÐ. 2. **¯½ × ¯ ñ ¼Àtý ÅÕõ þÃò¾Øò¾ì Ì ¨ È×:** சிஸ்டோலிக் இரத்த « Øò¾õ º¡ôÀtð¼ 75 ¿tÁt¼ í ¸ Çtø (20 mmHg) Ì ¨ ÈÅÐ. 3. **¿ Î ¿t¨ ÄÂtø ÅÕõ þÃò¾Øò¾ì Ì ¨ È×:** ¦¿ Î §¿Ãõ ¿tü Ì õ ¦À¡ØÐ þÃò¾ « Øò¾õ Á¡ÚÀ Î õ. ¯½÷×ô â÷ÅÁ¡ É ¿t¸ú× ¸ Çtý §À¡Ðõ þÃò¾Øò¾ò¾tø Á¡üÈõ ²üÀ Î õ.		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		4. **¸ Î ¨ÁÂ¡É þÃò¾Øò¾ì Ì ¨È×:** «¾¢÷î º¢ ÁüÚõ Á¢¸×õ ¬Àò¾¡É ¿¢ ¨ Ä ²üÀ Î õ §À¡Ð þÃò¾ «Øò¾ Á¡üÈõ ²üÀ Î õ. **« ¨¼Â¡Ç í ¸ û ÁüÚõ «È¢ Ì È¢¸ û:** • க Î ¨ Áயான ÀÄÅ£Éõ • À¡÷ôÀ¾¢ø º¢ÃÁõ (À¡÷ ¨ Å Á í Ì ÅÐ) • Ì Áð¼ø ÁüÚõ Å¡ó¾¢ • Å¡ö ÅÈ ñ Î §À¡¾ø • §¾¡ø º¢ø ¦Ä ý Ú §À¡ Ì ¾ø • ¾¢Ë ¦ÃÉ ÁÂ í ¸¢ Å¢Ø¾ø ÁüÚõ íÂ¿¢ ¨ É Å¢ý ¨ Á • Ì ÆôÀõ, ¿¡ÊòÐÊôÒ §Å ¸õ «¾¢¸Ã¢ò¾ø **Á¾¢ôÀீ Î õ Ó ¨È¸ û:** • §¿¡Â¡Ç¢ ¨Â ¦ÀÂ÷ ¦¸¡ ñ Î « ¨ÆòÐ «ÅÃ¢ý íÂ ¿¢ ¨ É ¨ Å Á¾¢ôÀ¢¼ §Å ñ Î õ. • Ì ¨Èó¾ þÃò¾Øò¾ò¾¢ü¸¡É « ¨¼Â¡Ç í ¸ û ÁüÚõ «È¢ Ì È¢¸ ¨ Ç Á¾¢ôÀ¢¼ §Å ñ Î õ (ÁÂì ¸õ, º¢ø ¦Ä ýÈ ®ÃÁ¡É §¾¡ø). • §¿¡Â¡Ç¢Â¢ý þÃò¾ «Øò¾ò ¨ ¾ «Çì ¸ §Å ñ Î õ.		

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃtý ¦ºÂøÀ¡ Î	¸üÀÅÃtý ¦ºÂøÀ¡ Î
		«ÅºÃ¸¡Ä ¿¼ÅÊì ¨ ¸ ¸ û: • «ó¾ ¿À¨Ã ´Õ ¿¡ü¸¡ÄtÂtø ¯ð¸¡Ã ¦ºöÂ §Å ñ Î õ «øÄÐ Åº¾tÂ¡ ÀÎ ì ¸ ¨ Åì ¸ §Å ñ Î õ. • §¿¡Â¡Çt Âtý ¾¨ ÄÂtý «ÊÂtø ¾¨ ÄÂ¨ ½¨ Â ¨ ÅòÐ ¾¨ Ä¨ Âº üÚ ¯Â÷ò¾t ¨ Åì ¸ §Å ñ Î õ. • §¿¡Â¡Çtì Ì ¯ôÒ ¾ ñ ½÷ «øÄÐ §Á¡÷ «øÄÐ ¿Ã¡¸¡Ãõ (ORS) ¦¸¡Î ì ¸ §Å ñ Î õ. • ÁÕòÐÅõ «Çtôà¾ü Ì **அவசர ஆம்புலன்ஸ்** 108ì Ì ¦¾¡¼÷Ò ¦¸¡ûÇ×õ «øÄÐ «Õ¸tø ¯ûÇ ÁÕòÐÅÁ¨ ÉÂtý ¬ õÒÄ ý Íì Ì ¦¾¡¼÷Ò ¦¸¡ûÇ×õ. **®) þÃò¾ì ¦¸¡¾tôÒ «ÅºÃ¿t¨ Ä Å¨ÃÂ¨È:** ¯Â÷ þÃò¾ «Øò¾õ ±ýÀÐ ÀÄ Á½t §¿Ãí ¸Çtø þÕóÐ ÀÄ ¿¡ð¸û Å¨Ã ¯ÕÅ¡tÈÐ. þ¾tø §¿¡Â¡Çt Âtý þÃò¾ «Øò¾õ >180/120 mm Hg ¬ ¸ ¯Â÷¸tÈÐ. þÐ ¯¼ø ¯ÚôÒ¸¨ Ç §º¾Á¡ì Ì ¸tÈÐ ÌÈtôÀ¡ ¸ ¿ÃõÒ Á ñ ¼Äò ¨ ¾Ôõ À¡¾tì ¸tÈÐ.		

Å. ± ñ	À í ¸ Ç¢ôÒ §¿¡ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸õ	¬ öÅ¡ÇÃ¢ý ¦ºÂøÀ¡ Î	¸üÀÅÃ¢ý ¦ºÂøÀ¡ Î
		±î ºÃ¢ì ¨ ¸ « ¨ ¼Â¡Ç í ¸ û: • ¾ ¨ ÄÅÄ¢ • §º¡÷× • Ì ÆôÀõ « ø Ä Ð ÁÈதி • « ¾¢ ¸ ப்ÀÊÂ¡ ¸ Å¢Â÷ò¾ø « ø Ä Ð ¾ ¨ Ä ÍüÚ¾ø • ¾¢Ë ¦ÃÉ மய í கி Å¢Øதல் • §À Í Å¾¢ø « ø Ä Ð §À Í Å ¨ ¾ ÒÃ¢óÐ ¦ ¸ ¡û Å¾¢ø º¢ரமõ • À¡÷ ¨ Å §¸ ¡Ç¡Ú • ã ì ¸¢ø þÃò¾ம் வÊதல், ÅÄ¢ôÒ • ¨ ¸ ¸ ¡ø ¸ û ÁÈòÐ §À¡¾ø, ÀÄÅ£Éõ « ø Ä Ð ¯¼Ä¢ø ´ Õ Àì ¸õ செயலிழத்தல் **Á¾¢ôÀ¢ Î õ Ó ¨ È:** • §¿¡Â¡Ç¢Â¢ý Í Â¿¢ ¨ É Å¢ý « Ç ¨ Å Á¾¢ôÀ¢¼ §Å ñ Î õ. • þÃò¾ì ¦ ¸ ¡¾¢ôÀ¢ý « ¨ ¼Â¡Ç í ¸ ¨ Ç Á¾¢ôÀ¢¼ §Å ñ Î õ (¾ ¨ ÄÅÄ¢, À¡÷ôÀ¾¢ø ÁüÚõ §À Í Å¾¢ø §¸ ¡Ç¡Ú, þÃò¾ôÀ¡ì ¸¢ü ¸ ¡É «È¢ Ì È¢)		

Å. ± ñ	À í ¸Çłôò §¿¡ì ¸í ¸û	¦À¡ÕÇ¼ì ¸õ	¬ öÅ¡ÇÃłý ¦ºÂøÀ¡ Î	¸üÀÅÃłý ¦ºÂøÀ¡ Î
		• §¿¡Â¡Çł Âłý þÃò¾ «Øò¾õ ÁüÚõ þ¾ÂòÐÊô ¨À ¸ñ ¸¡½łì ¸ §Å ñ Î õ. • ¯¼ø ÀÄÅ¦É ò ¨¾ Á¾łôÀ¼ §Å ñ Î õ (¯¼ø ¯û ¯ÚôÒ பாதிப்Ò) **«ÅºÃ¸¡Ä ¿¼ÅÊì ¨ ¸¸û:** • §¿¡Â¡Çł¨Â «ÁÃ «øÄÐ Åº¾Â¡ ¸À Î ì ¸ ¨Å ì ¸ §Å ñ Î õ. • §¿¡Â¡Çł¨Â ¬ ÍÅ¡ºபப Î த்தி ´Õ ¬ úó¾ ã î ¨ º Å¼ «È×Úò¾ §Å ñ Î õ. ÁÉ «Øò¾ò¾ÄłÕóÐ Åł Î À¼ §Å ñ Î õ. • « ¨ Á¾Â¡É ÁüÚõ ¸¡ü§È¡ð¼Á¡É Ý ú¿ł¨ Ä ¨ Â ¾Ã §Å ñ Î õ. • ¬ Ú¾ÄÇłòÐ ¸Å ¨ Ä ¨ Â Ì ¨ Èì ¸ §Å ñ Î õ. • §¿¡Â¡Çł ÍÅ¡ºłôÀ¨¾Ôõ, þÃò¾ «Øò¾õ, ¿¡Êò ÐÊôÒ, ¿ł¨ É Å¡üÈÄłý «Ç× ÁüÚõ «À¡Â «Èł Ì Èł ¸û (ÅÄłôÒ, ¯¼Äłý ¯ðÒÈ ÀÄÅ¦Éõ) ¬ ¸łÂÅü ¨È ¸ ñ ¸¡½łì ¸ §Å ñ Î õ. • §¿¡Â¡Çł Âłý « ¨ º× ¸ ¨Ç Ì ¨ Èì ¸ §Å ñ Î õ. • Å¡ó¾ł «øÄÐ ÅÄłôÒ þÕó¾¡ø, §¿¡Â¡Çł¨Â þ¼Ð ÒÈÁ¡ ¾ÕôÒÅ¾ý ãÄõ ¦ÅÇł§ÂÚõ ¦À¡Õð ¸û ÍÅ¡ºôÀ¡ ¨ ¾யினு û ¦சல்வ ¨ த ¾ Î ì ¸லாம்.		

Å. ± ñ	À í ¸ Çtôò §¿ ¡ ì ¸ í ¸ û	¦À¡ÕÇ¼ì ¸ õ	¬ öÅ¡ÇÃtý ¦ºÂøÀ¡ Î	¸üÀÅÃtý ¦ºÂøÀ¡ Î
		• ¿t ¨ É Å¡üÈÄtø ²¾¡ÅÐ Á¡üÈõ þÕó¾¡ø §¿¡Â¡Çtì Ì ¯ ñ ½ §Å¡ «øÄÐ ÌÊì ¸ §Å¡ ±Ð×õ ¾Ãì Ü¼¡Ð. • ¸¡ôÀt «øÄÐ ÁÐÀ¡É í ¸ ¨ Ç ¾Åt÷ì ¸ §Å ñ Î õ. • §¿¡Â¡Çt¸û þÃò¾ ¦¸¡¾tôÀtü¸¡É ÁÕó¨¾ ± Î òÐì ¦¸¡ûÀÅÃ¡¸ þÕó¾¡ø ÁÕòÐÅ¨Ã ¦¾¡¨Ä§ÀºtÂtø ¦¾¡¼÷Ò ¦¸¡ñ Î «Å÷ ¬§Ä¡º¨ Éô ÀÊ þÃò¾ ¦¸¡¾tôÀtü¸¡É ÁÕó¨¾ §¿¡Â¡Çtì Ì ¦¸¡ Î ì ¸ §Å ñ Î õ. • ÁÕòÐÅõ «Çtôà¾ü Ì **அவசர ஆம்புலன்ஸ்** 108ì Ì ¦¾¡¼÷Ò ¦¸¡ûÇ×õ «øÄÐ «Õ¸tø ¯ûÇ ÁÕòÐÅ¨ÉÂtý ¬õÒÄý Íì Ì ¦¾¡¼÷Ò ¦¸¡ñ Î «¨Æì ¸ ×õ.		

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± ñ</th><th>À í ¸ Çtôò
§¿ ¡ ì ¸ í ¸ û</th><th>¦À¡ÕÇ¼ì ¸ õ</th><th>¬ öÅ¡ÇÃt ý
¦ºÂøÀ¡ Î</th><th>¸ üÀÅÃt ý
¦ºÂøÀ¡ Î</th></tr>
<tr><td></td><td></td><td>þ¾Â «ÅºÃ¸¡Ä ¯¾Åt ¦À¡Õð¸û அடங்கிய ¨ப:
<table>
<tr><th>Å.
± ñ</th><th>Åt¿t§Â¡¸õ</th><th>¸¡Ã½õ</th></tr>
<tr><td>1.</td><td>ÁÕòÐÅì ÌÈtôÒ¼ý ÜÊÂ §¿¡Â¡Ç¢Â¢ý Å¢ÅÃí¸û</td><td>§¿¡Â¡Ç¢Â¢ý Å¢ÅÃí¸¨Ç ¦¾Ã¢óÐ ¦¸¡ûÇ</td></tr>
<tr><td>2.</td><td>¦º¡ñ¤ ÁÕóÐ Å¢ÅÃô ÀðÊÂø</td><td>§¿¡Â¡Ç¢Â¢ý ¦º¡ó¾ ÁÕóÐ¸¨Ç ÁüÚõ «Ð ¸¡Ä¡Å¾¢ ¬ Ìõ ¿¡û ¦¾Ã¢óÐ ¦¸¡ûÇ</td></tr>
<tr><td>3.</td><td>þÃò¾ «Øò¾ò¨¾ Á¾¢ôÀ¢ Îõ ¸ÕÅ¢ - 1</td><td>þÃò¾ «Øò¾ò¨¾ ÀÃ§º¡¾¢ì¸</td></tr>
<tr><td>4.</td><td>Ì Ù ì §¸¡Á¢ð¼÷- 1</td><td>þÃò¾ º÷ì¸¨Ã «Ç¨Å ¸ñ¸¡½¢ì¸</td></tr>
<tr><td>5.</td><td>அவசரகால ஆம்புலன்ஸ் தொடர்பு ± ñ ¸û ÁüÚõ §¿¡Â¡Ç¢Â¢ý ÁÕòÐÅÃ¢ý ¦¾¡¨Ä§À°¢ ± ñ ¸û</td><td>ஆம்புலன்ஸ் உபயோகித்து ÁÕòÐÅ¨Ã « Ï ¸</td></tr>
<tr><td>6.</td><td>மேல்பூச்சு இல்லாத ஆஸ்பிரின் மாத்தி¢¨Ã 325 Á¢.¸¢ (ÅÂ¾¡§É¡÷) - 1 «øÄÐ «Ç× Ì¨Èó¾ ÌÆó¨¾ì Ì ¾Ãì ÜÊÂ ஆஸ்பிரின் 81 Á¢.¸¢ - 4</td><td>Á¡÷Ò ÅÄ¢¨Â Ì½ôÀÎòÐõ ÁÕóÐ</td></tr>
<tr><td>7.</td><td>¨¿ð§Ã¡¸¢ÇºÃ¢ý Á¡òò¢¨Ã-5Á¢.¸¢. 3</td><td>Á¡÷Ò ÅÄ¢¨Â Ì¨Èì Ìõ ÁÕóÐ¸û</td></tr>
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		Ó Ê × ¨ Å **“இதய அவசரகால நிலையின் அந்த பொன்னான ஒரு மணி நேரத்தை பாதுகாத்து உயிரை காப்பவராக இருத்தல் வேண்டும்.”**  **உயிர்காக்கும்** **முதலுதவி** **þ¾Â «ÅºÃ¸¡Ä ¿ł¨Ä** ±ýÀÐ Å¡úì¨¸¨Â «îÍÚòÐõ §¸¡Ç¡È¡ì õ. þ¾¨É ¯¼ÉÊÂ¡¸ «¨¼Â¡Çõ ¸ñ Î **Òò¾º¡Äłò¾ÉÁ¡¸×õ «È ł×¼Ûõ «ÅºÃ¸¡Ä ¾Â¡÷ ¿ł¨Ä ¦¿È łÓ¨È¨Âô** ÀÂýÀÎò¾ §¿¡Â¡Çł Âł ý ¯Âł¨Ãì ¸¡òÐ «Å÷¸Çł ý **Å¡úì¨¸Âł ý** ¾Ãò¨¾ §ÁõÀÎò¾ ÓÊÔõ.		

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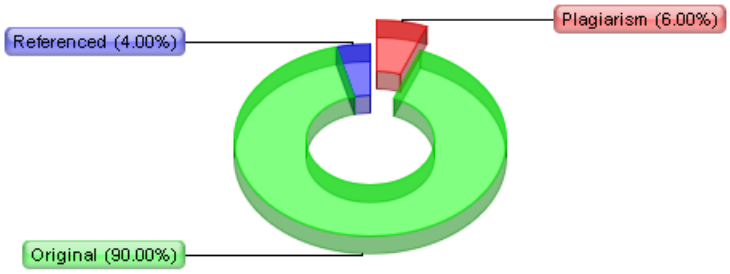

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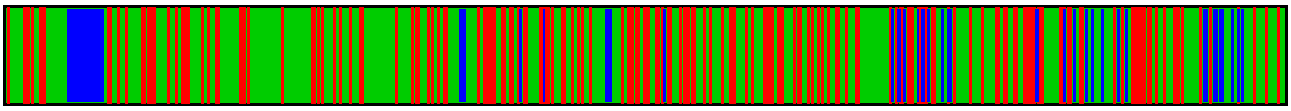

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APPENDIX -N

DISSERTATION EXECUTION PLAN-GANNT CHART																					
S.NO	**CALANDER MONTHS**	**Nov 16**	**Dec 16**	**Jan 17**	**Feb '17**	**Mar '17**	**Apr '17**	**May '17**	**June '17**	**July '17**	**Aug '17**	**Sep '17**	**Oct '17**	**Nov '17**	**Dec '17**	**Jan '18**	**Feb '18**	**Mar '18**	**Apr '18**	**May '18**	**June '18**
A	**Conceptual phase**																				
1	Problem identification																				
2	Literature review																				
3	Clinical fieldwork																				
4	Theoretical framework																				
5	Hypothesis formulation																				
B	**Design & planning phase**																				
6	Research design																				
7	Intervention protocol																				
8	Population specification																				
9	Sampling plan																				
10	Data collection plan																				
11	Ethics procedure																				
12	Finalization of plans																				
C	**Empirical phase**																				
S13	Data collection																				
14	Data preparation																				
D	**Analytical phase**																				
15	Data analysis																				
16	Interpretation of results																				
E	**Dissemination phase**																				
17	Presentation or report																				
18	Utilization of findings																				
	Calendar months	**11**	**12**	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	09	10	11	12	13	01	11	12	02	**03**

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